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ARMY TROOP SUPPORT AND AVIATION MATERIEL READINESS CO--ETC F/6 5/3
HISTORICAL INFLATION PROGRAM. (A COMPUTER PROGRAM GENERATING HI--ETC(U)
JAN 80 W H GILLE
TSARCON-TR-80-1

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report extends and revises Technical Report 79-1 which presents and de- scribes the Historical Inflation Program, a computer program generating historical inflation indices for Army aircraft. The program can be updated monthly, is easily revised for changes in Bureau of Labor Statistics methods, and is capable of handling data for all fiscal year formats. Output is express- ed as monthly, quarterly, Fiscal Year, and Calendar Year inflation indices (in Calendar Year 1967 base) and inflation factors (in any Fiscal Year base). This report contains updated tables of inflation factors, expressed in a FY 79		

20. ABSTRACT.

base. These indices and factors provide a means of adjusting historical cost data for the procurement of Army Aircraft to constant year dollars. Additional features include: computations for the Derivation of Revised Weighting Factors, detailed indices enabling the adjustment of historical Labor and Material cost separately, a discussion of aggregate weighting factors for Labor and Materials, (including trends from sensitivity analysis with more background materials), and additional documentation aimed at making the report useful to a large cross section of the DOD/Rotary Wing Aircraft Community.

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The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other documentation.

ACKNOWLEDGEMENTS

The author extends his appreciation to the Kansas City Regional Office of the Bureau of Labor Statistics, U.S. Department of Labor, for special assistance with wage and price data.

Credit is due Mr. Ralph Lilge, USAAVRADCOM, who played a primary role in automating the Historical Inflation Program in 1975.

Ms. Marva Campbell, and Ms. Paula Smith provided excellent clerical support in the revision of this paper.

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I. APPLICABILITY. The inflation indices and factors published in this report are applicable to the adjustment of historical costs for the procurement of Army aircraft. These costs are currently funded by the Aircraft Procurement, Army and Other Procurement Army appropriations.

II. AN OVERVIEW OF THE HISTORICAL INFLATION PROGRAM.

A. History.

The Historical Inflation Program for Army aircraft procurement was developed using a sequence of documents, the first being Aerospace Price Indices, by H.G. Campbell (RAND # R-568-PR, 12/70). Essentially, the RAND document established a basis for the construction of general indices, identified items of special interest and concern, and indicated that no substitute exists for thorough analysis of the specific items being characterized by an historical index. Several indices, designed specifically for rotary wing aircraft, have been developed for the adjustment of procurement cost since that time by the United States Army Aviation Systems Command, and this function has been carried over to the Components and Operational Studies Branch, Cost Analysis Division, Office of the Comptroller, USATSARCOM.

The current indices are based on research done in the period 1972 to date. In July 1973, the Office of the Comptroller, Cost Analysis Division, made a study of materials used in the Army helicopter systems then, or most recently, in production. Cost Information Reports were assembled, and contractors were asked to supply lists of materials for both airframe and engine, on the basis of contribution to weight. Contractor technical and engineering personnel provided assistance with data interpretation and definitions for items whose composition was unclear from engineering documents and Detailed Weight Statements.

The following aircraft were selected:

UH-1H	OH-6A	AH-1G
CH-47C	OH-58A	CH-54B

This selection of aircraft is deemed typical for several reasons. First, the six helicopter systems listed above make up the majority of the U.S. Army Air Order of Battle listed in Section III. Second, a number of these aircraft had been produced on a long term, continuing basis in previous versions. And, third, and most important, they are among the systems most likely to be used in developing Cost Estimating Relationships for new systems by use of parametric techniques.

The September 1973 Historical Inflation Cost Research Report, cited in the references, was the first report to make full use of this information. It was updated by the August 1974 Cost Research Report, and then by a series of expanded analyses under current title, Historical Inflation Program, since that time. A list of the assumptions and changes in methodology over the period referenced are included in the body of the Technical Section.

B. Construction of Indices - Methodology.

The indices are developed by a stepwise, building process, which computes the contributions to cost on a weighted value-added basis.

1. First, the contribution to cost of small parts and other purchased equipment is calculated.
2. Next, the cost contribution of purchased parts is combined with that of raw materials to get the cost of purchased materials.

3. Purchased material cost is then combined with contractor labor cost to compute the index for products such as engine or airframe.

4. The indices for engine, airframe, and avionics are combined to get an overall index for aggregate aircraft.

C. Indexing Technique.

The procedure used is "Cost-Weighting". The information obtained from 1973 research on "helicopter materials" established percentages based on weight. Because the indices used to track material costs are based on monetary considerations (e.g., Producer Price Index; Wages, by Standard Industrial Code), percentages by weight had to be transformed into percentage contributions to cost, if PPI and SIC inflation factors were to be applied directly. Based on the premise of profit maximization, contractors should tend to minimize the use of expensive materials subject to maintaining acceptable performance standards; essentially, materials with a high cost per unit weight ration would be used sparingly. Adjusting a percentage based on weight using a monetary index would not only result in an improper index initially, but also one with diminishing reliability. The latter bias is avoided by calculating the contribution to cost, instead of merely the contribution to weight.

D. Weighting Factors. Although the model is developed by an iterative, stepwise process, the revised weighting factors in the table (at the end of Appendix B) implicitly include all calculations. The index, as stated, is merely the direct sum of

the products of the weights and their corresponding material index values. The development of weighting factors is illustrated in the Technical Section.

2. Data. The data used appear in two different forms. Yearly data are presented by Calendar Year 1947 to date, and monthly data for 1967 to date. The yearly data, pre 1958, are condensed into three columns; the data for 1958 and later are presented in an 18 column format - 14 columns for material inputs, and 4 for labor. Beginning with report 76-1B, all columns of the data set have been identified by PPI and SIC code, as well as a verbal description in the column heading. PLEASE NOTE: The data, their characterization, and any redefinition, by the Bureau of Labor Statistics over the years, are tracked in line diagram C-2.

3. Validity and Firmness of Data.

The Producer Price Index and Wage Data was supplied by the Kansas City Regional Office of the Bureau of Labor Statistics, U.S. Department of Labor. The data comes in three types of published form: (1) a cumulative history covering all relevant past years on a monthly basis. (2) A yearly edition (such as Wage and Price Index Annual Supplement) which lists the previous 12 months, and (3), monthly publications which list the most current month and several other months for comparison.

For data to be "firm" it must be at least 18 months old, in most cases, because it is benchmarked and adjusted after the fact. For example, small samples are taken throughout the year; however, during one month (the benchmark month), a much more comprehensive

sample is taken. Due to its significantly larger sample size, the benchmark month's sample is felt to be more representative than those of other individual months, and if the benchmark diverges from the pattern, the other months are adjusted proportionately to conform to its base as benchmark.

The data in the cumulative history "type" publication is felt to be firm or "final". Basically, such publications provide a chronological listing of all firm data available for the past history of those indices. However, the data in such publications is usually 18 to 24 months behind the current period. The data for each month listed in the Annual Supplements is not necessarily firm because benchmarks occur during the Calendar Year, and at different times for different series. Adjustments may not have been made before the Annual Supplements are published. The monthly publications, which contain information on the most current periods, are even more tentative. In general, the Producer Price Index Data are firm before Wage Indices for the corresponding month, probably due to the fact that it is easier to define and measure price changes for commodities than for human skills.

C. Particular Problems.

1. The Wage Data for the period CY 1971-CY 1973 changed, in many cases, during FY 75-FY 76. The wage-price freeze disallowed certain salary and wage increases, but a number of these were awarded on a retroactive basis based on legal decisions rendered several years after the fact. Because such payments involved costs directly attributable to labor services during the

period, these payments had to be incorporated in the indices to provide an accurate measure of labor earnings.*

2. With the September 1978 issue of Employment and Earnings, the reporting categories for a number of types of production labor were changed. In effect, the 1967 Standard Industrial Classification Code has been supplanted by the 1972 SIC Code.

The Changes are as follows:

<u>SIC Code & Title</u>	<u>-to-</u>	<u>SIC Code & Title</u>
3674,9 Electronic Devices & Components		367X Electronic Components and Accessories
3722 Aircraft Engines and Engine Parts		3724 Aircraft Engines and Engine Parts
3723,9 Aircraft Parts and Equipment		3728 Aircraft Equipment

The reclassification had little or no impact on this study due to the essential similarities, by definition, of the old and new labor categories.

3. Potential discrepancies in the data set were eliminated by comparing data elements with the most recent data on microfiche for the 14 material and 4 labor categories used in the report. All data were verified to be the latest and most accurate available, on 20 January 1979.

*See ELS Bulletin No. 1312-10, Employment and Earnings 1909-75 for a detailed explanation (esp. p. 769).

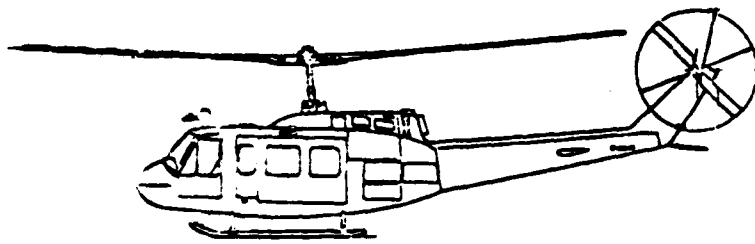
F. Change in Content from the Previous Reports.

A printout of the computer program used for the Historical Inflation Program is not included in this report, for two reasons. ~~First~~ It was found that a list of structural equations would better serve the purpose of elucidating the model. At the same time, with the reduced form equations and clearly identifiable data sets, any index figure can be checked by direct calculation (See Appendix B, page B-4). Second, direct duplication of the deck from the original is more accurate and efficient than keypunching copies from the program source listings, should such an external need ever develop.

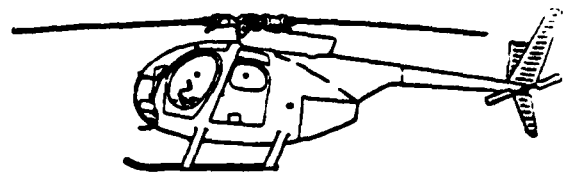
A sensitivity analysis, which displays the effects resulting from a change in the relative weights of labor and material in the Historical Index, has been included in this revision. The percentage contribution to cost attributable to labor and materials varies among aircraft systems, and the values used in this report--.378 (materials) and .622 (labor)--are an average for the six systems referenced. The sensitivity analysis yields a measure of the extent to which the index for a single aircraft system would vary, if that system is built with an aggregate labor/material mix which differs from the six system average. The accuracy of the re-weighted index, however, also requires that the other assumptions be well satisfied, i.e., the 14 material and 4 labor indices are typical of the system being reviewed. Because such weighting is a concern in developing estimates in inflated dollars, the effect of such "weighting changes" should be of significant interest to many readers.

DATA CONCERNING:

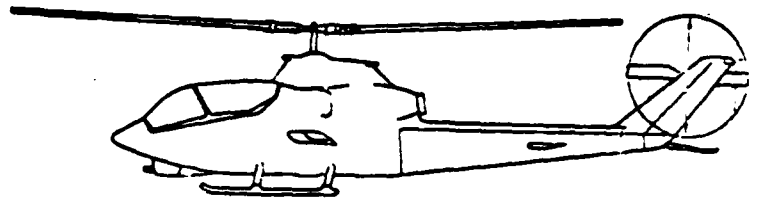
The Material Content of U.S. Army Helicopter Systems



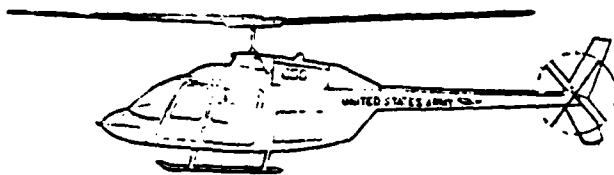
UH-1H "HUEY"



OH-6A "CAYUSE"

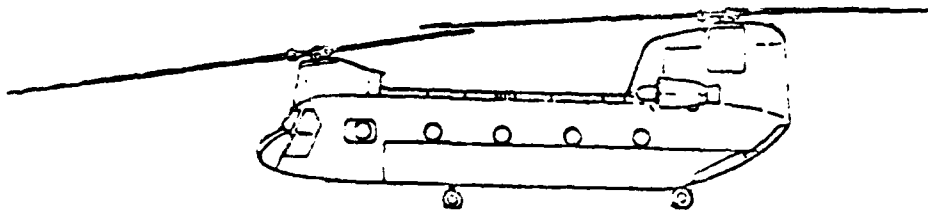


AH-1G "COBRA"

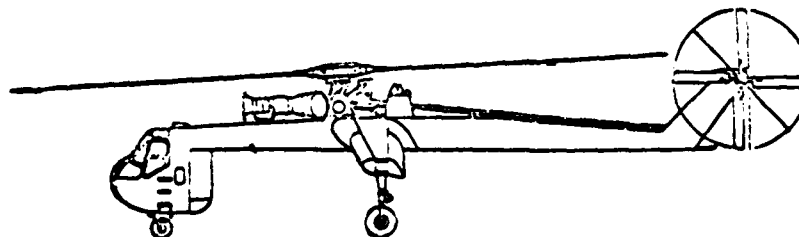


OH-58A "KIOWA"

U S A R M Y A I R C R A F T



CH-47C "CHINOOK"



CH-54B "SKYCRANE"

whg

Air Order of Battle

United States Army - Quantities and Types of Aircraft

ROTARY WING AIRCRAFT

<u>System Designation</u>	<u>Popular Name</u>	<u>Approx Empty Wt.</u>	<u>No. of Aircraft</u>	<u>Percent of Fleet</u>
AH-1	"COBRA"	5,800 lbs.	800	10.2%
UH-1	"HUEY"	5,100 lbs.	4,200	53.2%
OH-6	"CAYUSE"	1,200 lbs.	450	5.7%
OH-58	"KIOWA"	1,750 lbs.	1,900	24.1%
CH-47	"CHINOOK"	19,500 lbs.	430	5.5%
CH-54	"SKYCRANE"	19,800 lbs.	75	1.0%
UH-60A	"BLACK HAWK"	10,500 lbs.	29	.3%
AH-64A	"ADV. ATTACK"	10,400 lbs.	0	0%
			<u>7,884</u>	<u>100.0%</u>

Sources: FM 101-20 (UNCLASSIFIED).
World Combat Aircraft Directory
Doubleday and Co.,

USAAVSCOM COST ANALYSIS DATA 1976

AMSAV-CCE

31 July 1973

MEMORANDUM THRU: Mr. Gerald Dockins, Acting Chief, Estimates and Studies Branch

FOR: Mr. Edward P. Laughlin, Chief, Cost Analysis Division *EL*
SUBJECT: Material Composition Analysis of U.S. Army Helicopters, July 1973

1. On 6 June 1973, this office received a request from Mr. W.J. Trope, AMC Comptroller Office, Cost Analysis Division, for the material composition of a UH-1H helicopter. On 18 June 1973, Chief, AVSCOM Comptroller Office, Cost Analysis Division requested a similar analysis be performed on the following Army helicopters:

- a. CH-47C.
- b. OH-6A.
- c. OH-58A.
- d. AH-1C.
- e. CH-54B.

2. A search of the technical data files and aircraft drawings failed to produce the desired data. The analysis was completed with the assistance of AVSCOM Systems Engineering Division, Directorate of R&E and pertinent U.S. Army Plant Activities. Contractors were also contacted during the data search, and others. The data obtained are a combination of expert opinion, engineering estimates and contractor data obtained under previous contracts.

3. The following Cost Analysis personnel were assigned to this project:

Aircraft System	Assigned To
UH-1H	Gerald Dockins
CH-47C	James Cadell
OH-6A	John Thilmany
OH-58A	Gerald Dockins/James Cadell
AH-1C	Gerald Dockins/James Cadell
CH-54B	James Cadell

AMSAV-CCE

31 July 1973

SUBJECT: Material Composition Analysis of U.S. Army Helicopters, July 1973
4. Copies of the Material Composition Analysis have been placed in the following files:

- a. A new file folder titled "Material Composition Analysis".
- b. A complete copy of the findings placed in the file folder titled "Inflation".
- c. A separate file of the findings relating to turbine engines has been created.
- 5. Summary Tables and Material Composition Analyses are inclosed.

James M. Cadell
JAMES M. CADELL
Math-Stat

1 Incl
as

Material Composition Analysis
of Army Helicopters
(Dated July 1973)
Material (Pounds)

U.S. Army Helicopters.

Aircraft Model	Empty Weight	Aluminum	Steel	Magnesium	Titanium	Copper	Brass	Bronze	Lead	Tungsten	Nickel Alloy	Nonmetallic
UH-1C	5,394	1,888	1,780	216	108	593	0	0	216	0	0	593
UH-1B	4,973	1,579	1,718	280	70	400	100	0	100	0	0	726
OH-6A	1,163	666	218	46	-	30	23	3	0	1	25	150
OH-58A	1,586	536	543	55	15	101	0	0	43	0	0	293
CH-47C	19,400	8,312	7,989	1,304	63	676	4	16	0	45	0	2074
CH-54B	17,700	8,931	3,860	72	970	516	20	23	1	0	788	4584

U.S. Army Turbine Engines.

Engine Model	Dry Weight	Aluminum	Steel	Magnesium	Titanium	Copper	Nickel Alloy	Nonmetallic	Stainless Steel	Steel Alloy
T53-L-13	527	79	316	80	26	3	0	23	0	0
T63-A-5A	138	1	106	26	0	0	0	3	0	0
T63-A-70G	138	1	108	26	0	0	0	3	0	0
T53-L-7C	590	0	510	50	20	10	0	0	0	0
T71-P-70G	981	1	0	0	0	0	290	0	596	94

U.S. Army Helicopter Airframe, Only.

Aircraft Model	Airframe Weight	Aluminum	Steel	Magnesium	Titanium	Copper	Brass	Bronze	Lead	Tungsten	Nickel Alloy	Nonmetallic
UH-1C	4,867	1,809	1,464	136	82	590	0	0	216	0	0	570
UH-1H	4,446	1,500	1,402	200	44	400	100	0	100	0	0	700
OH-6A	1,025	666	109	20	1	30	23	3	0	1	25	147
OH-58A	1,448	536	434	29	15	101	0	0	43	0	0	290
CH-47C	19,303	8,312	6,969	1,204	23	656	4	16	0	45	0	2,072
CH-54B	17,803	8,928	2,480	72	970	516	20	23	1	0	209	4,384

TABLE 3 **

SUMMARY OF AIRFRAME AND ENGINE CIR DATA*

	(1) Airframe	(2) Engine
Labor	62.08%	40.85%
Material	<u>37.92%</u>	<u>59.15%</u>
Total Cost	100.00%	100.00%
Raw Material	41.88%	70.58%
Production Equipment	<u>58.12%</u>	<u>29.42%</u>
	100.00%	100.00%

(1) Airframe factors were obtained from a sample of 15 CIR reports representing the AH-1, CH-47, CH-54, OH-6, and OH-58 aircraft systems.

(2) Engine factors were obtained from a sample of 14 CIR reports representing 11 different turbine engine configurations procured from Lycoming, Allison, General Electric, and Pratt & Whitney.

*As adjusted by Labor and Material price movements.

** From HISTORICAL INFLATION INDICES FOR ARMY AIRCRAFT
U.S. Army Aviation Systems Command, St. Louis, 1974,
p. 11.

TECHNICAL SECTION

IV. ANALYSIS: (TECHNICAL SECTION).

A. Chronology. Previous efforts related to the development of inflation indices include Aerospace Price Indexes by H.G. Campbell, RAND Corporation, December 1970 (Reference 1) and two Cost Research Reports: Historical Inflation Indices for Army Aircraft, Cost Analysis Division, Office of the Comptroller, US Army Aviation Systems Command, September 1973 (Reference 4), and Historical Inflation Indices for Army Aircraft, Cost Analysis Division, Office of the Comptroller, US Army Aviation Systems Command, August 1974 (Reference 5).

1. Characteristics of the RAND Report.

a. Specific Producer Prices and Price Indexes (Reference 8) and Employment and Earnings (Reference 2) data have been selected as proxy series for similar commodity and labor categories experienced in the procurement of Army aircraft. Aircraft inflation indices are constructed from a weighted average of these proxy series. The weighting factors for this average are derived from estimates of the relative contribution to the total aircraft cost made by each component (commodity or industry labor group) comprising the index. The index is thus a "cost-weighted" series.

b. A 2 1/2 percent compounded annual rate for growth of overhead ratios is assumed.

c. No adjustment is made for productivity increases.

d. Indices are developed on a Calendar Year basis.

2. Characteristics of the September 1973 Cost Research Report.

a. As with the RAND Report, aircraft inflation indices have been constructed from a weighted average of Producer Prices and Price Indexes and Employment and Earnings data selected as proxy series for their similarity to those commodities and labor categories experienced in the procurement of Army aircraft. Weighting factors are proportional to the relative physical weights or masses, rather than the relative costs (as in the RAND Report), of commodities comprising the "composite material" portion of the index. Thus, the "composite material" portion of the index represents a "weight-weighted" series.

b. Like the RAND Report, a 2½ percent annual growth in the overhead ratio is assumed.

c. No adjustment is made for productivity increases.

d. Indices are developed on a Calendar Year basis.

e. For years for which certain specified Producer Price Indexes were unavailable, data has been projected from adjacent years.

3. Characteristics of the August 1974 Research Report.

a. As before, Producer Prices and Price Indexes and Employment and Earnings data have been selected as proxy series most similar to those commodities and labor categories experienced in the procurement of Army aircraft. The indices have been constructed from a weighted average of these proxy series utilizing the weighting factors used in the September 1973 Cost Research Report. The "composite material" portion of the index represents a "weight-weighted" series.

b. Unlike RAND and the September 1973 Cost Research Report, no adjustment for overhead growth is assumed.

c. No adjustment for productivity increases is assumed.

d. Indices have been extended to FY 1974 by assuming that data for the September 1973 Cost Research Report represented December and hence the Fiscal Year midpoint, rather than the annual average, of each calendar year.

e. For years for which certain specified Producer Price Indexes were unavailable, data has been projected from adjacent years.

B. Data Sources. Data sources for this report are Producer Prices and Price Indexes (reference 8) and Employment and Earnings (reference 2). To insure that the latest revisions were incorporated into the data base, data was obtained from the Bureau of Labor Statistics Information Center, and Annual Supplements to the Producer Prices and Price Indexes. For Employment and Earnings, data for any given month was obtained from the latest available source. Data used in this report are displayed in Appendices D, E, G, and H.

C. Methodology.

1. Overhead and Productivity Adjustments. On the basis of data covering a ten year period, the RAND Report concluded that there exists a secular growth trend of 24 percent per year in the production overhead rate. The report also concludes that there has been little, if any, improvement in productivity to counteract the observed trend in overhead growth. This conclusion appears to

be unwarranted, particularly in light of productivity gains recorded (as measured by Industrial Production Indices) for similar sectors of industry. Thus, in order not to unduly bias the results of the analysis, this report makes no adjustment for either overhead growth or improvements in productivity.

2. Revision of Weighting Factors. From a number of Cost Information Reports, the following weighting factors were developed and reported in the September 1973 Cost Research Report. For the Airframe:

$(.378) \text{ Raw Material} + (.622) \text{ Labor } 3723,9 \text{ (3728)}$
= Purchased Equipment

$(.582) \text{ Purchased Equipment} + (.418) \text{ Raw Material}$
= Total Material

$(.378) \text{ Total Material} + (.622) \text{ Labor } 3721 = \text{Total Airframe}$

For the Engine:

$(.599) \text{ Raw Material} + (.401) \text{ Labor } 3723,9 \text{ (3728)}$
= Purchased Equipment

$(.295) \text{ Purchased Equipment} + (.705) \text{ Raw Material}$
= Total Material

$(.599) \text{ Total Material} + (.401) \text{ Labor } 3722 \text{ (3724)}$
= Total Engines

And for Avionics:

$(.318) \text{ Material} + (.685) \text{ Labor } 3674,9 \text{ (367x)} = \text{Total Avionics}$

In the previously published indices, the weighting factors used to develop the material portion of the indices were made proportional to the relative physical weights of the various commodities used in the construction of the aircraft. The material portion of these indices thus represent a "weight-

weighted" series. In order to be consistent with the intended purposes of an inflation index, the methodology in this program uses index weighting factors proportional to the numerical products obtained from multiplying the relative physical commodity weights by the appropriate base year cost per pound. This yields a "cost-weighted" index giving more weight to such expensive commodities as titanium. Unfortunately, however, price per pound data are not published in Producer Prices and Price Indexes for each of the commodities used in constructing the indices. To overcome this difficulty, the per pound price is estimated from the available data of the most closely related commodities. To minimize the effect from related commodities which have relatively little economic impact, each price per pound estimate has been developed from a weighted average of available data utilizing the Bureau of Labor Statistics 1975 revised relative weights published in the 1975 Annual Supplement to Producer (Formerly Wholesale) Prices and Price Indexes. The available data then constitutes a weighted sample from which a surrogate price per pound is computed for the Producer Price series in question. See Appendix A for the Computations for the Derivation of these Revised Weighting Factors, along with their associated cost contribution per pound.

3. Construction of Indices.

a. Calendar Year 1967 has been taken as the base of these indices because this year represents the approximate midpoint of the period (1958-1978) for which the data supports the develop-

ment of each of the indices, including those which account for avionics. Furthermore, 1967 conforms to the base used by the Bureau of Labor Statistics for Producer Price Indexes.

b. Appendix B contains the current Producer Price Index series, Earnings series, and the associated weighting factors used in the construction of the indices published in this report. Since some of these series have been in existence for only a limited time, other closely related series have been substituted with appropriate mathematical adjustments to insure continuity of the indices. This technique is considered preferable to the synthesis of data by projection from adjacent years. Appendix C depicts the historical flow and identifies the effective dates of series conversions, for the Producer Price Index and Earnings data used in the development of the indices published in this report.

c. The term "aggregate" has been selected to indicate inflation indices applicable to the combined Airframe and Engine (Aggregate Air Vehicle Excluding Avionics) and to the combined Airframe, Engine, and Avionics (Aggregate Air Vehicle Including Avionics) to avoid confusion with the term "composite" as in "composite escalation indices". Aggregate indices are based upon a standard 70-20-10 weighting (see Reference 6) of the Airframe, Engine and Avionics Indices respectively. Aggregate indices are intended for the adjustment of historical cost data for which the distribution of costs for the Airframe, Engine, and Avionics components is unavailable.

d. A new section depicting the raw material portion of

the inflation indices is published as Appendix I. It is intended for applications requiring greater accuracy. Appropriate labor indices can be obtained from the Bureau of Labor Statistics Employment and Earnings series (Reference 2) as follows:

<u>Labor Category</u>	<u>1967 SIC Code</u>	<u>1972 SIC Code</u>	<u>Industry</u>
Airframe Contractor	3721	3721	Aircraft
Airframe Subcontractor	3723,9	3728	Other aircraft part & equipment
Engine Contractor	3722	3724	Aircraft engines & engine parts
Engine Subcontractor	3723,9	3728	Other aircraft parts & equipment
Avionics	3674,9	367X	Other electronic components
Aggregate Air Vehicle Excluding Avionics	372	372	Aircraft and parts

e. The basic Computational Methodology is as follows :

(1) For Components: Airframe, Engine, and Avionics.

(a) Calendar Year indices are computed using sum of weighted calendar year labor and material indices.

(b) Fiscal Year indices are computed in a manner similar to Calendar Year, but the yearly fiscal averages are generated from the monthly data.

(c) Quarterly Indices are computed by averaging three months data from the monthly data set.

(d) Monthly indices are computed by direct calculation using monthly data. It is a weighted average of monthly figures computed using the same methodology as in computing the Calendar

Year indices.

For additional information, see Appendix B.

(2) Aircraft System Cost

The inflation indices for "Aggregate Vehicle" and "Aggregate Vehicle without Avionics" are produced by combining the three separate indices:

<u>Component</u>	<u>Relative Weight</u>
Airframe Index	70%
Engine Index	20%
Avionics Index	10%
<hr/>	<hr/>
Aggregate Vehicle	100%

<u>Component</u>	<u>Relative Weight w/o Avionics</u>
Airframe Index	78%
Engine Index	22%
<hr/>	<hr/>
Aggregate Vehicle without Avionics	100%

b. Reduced form equations are displayed in Appendix B, page B-3.

$$\begin{array}{lcl} (.7) \div & (.2 + .7) & = .78 \\ (.2) \div & (.2 + .7) & = .22 \\ & \hline & 1.00 \end{array}$$

V. DESCRIPTION OF COMPUTER PROGRAM AND ASSOCIATED APPENDICES.

The Historical Inflation Program is a computer program used to generate historical inflation indices for Army aircraft and their major subsystems. Appendices D and G contain the annual data used by the program, while the monthly data, commencing July 1967, are in Appendices E and H. Producer Price Index and Earnings data in these Appendices have been arrayed into columns with the same numerical code sequence used in Appendix B. Historical inflation indices and factors are published in Appendix F. Fiscal Year, quarterly, and monthly indices have been developed from the appropriate monthly data. A section containing the raw material portion only of these indices is published as Appendix I. The labor portion of these indices may be obtained by applying the methodology described in paragraph III.C.3 d, to the data contained in Appendices D and E.

VI. SENSITIVITY ANALYSIS

Many considerations are important when constructing Historical Indices for tracking purposes. These certainly include the following:

- a. The nature of the items chosen to comprise the index.
 - (1) How typical or representative the items are.
 - (2) How closely the proxy items approximate the actual items, if indices for the actual items are not obtainable.
 - (3) The number of items used, and the detail in the analysis which produced the indices.
- b. The determination of the percent contribution to cost - "Cost Drivers".
- c. The weighting factors employed in the overall analysis.

A difficult problem confronting cost analysts, who must determine the validity of an historical index for tracking purposes, relates to aggregate labor/material weighting factors. In tracking major weapons systems, the ratio is often stated as say 40/60 - that is 40 percent material and 60 percent labor - as percent contributions to cost. Because it is difficult for analysts to determine the "correct" aggregate mix of labor and material, being external to the project, the aggregate split is certainly of interest.

The value for any index depends on three factors:

- a. The number of factors employed, and the quality and depth of the analysis.
- b. The values for each component of cost used in the construction of the index.
- c. The weights, or levels of importance, given to the factors, individually and collectively.

The objective of this sensitivity analysis is to shed some light on the way in which the aggregate labor/material split affects the index, which has been a controversial issue for some time. Using a set of recursive linear equations, the effect on the historical inflation index, for airframe resulting from varying the aggregate weighting scheme was calculated, in both raw and percentage terms. The calculations were made using a Wang system 2200 minicomputer, and a sample printout follows. The results provide evidence that the key to a successful index resides in item (1), the number of factors employed, and the quality and detail in the analysis used in preparing the index. Because wages are often tied to the Producer Price Index, or other price indices, in labor agreements, it is not surprising that aggregate weighting percentages for labor and material might not be an extremely sensitive issue. However, the calculations provide strong support

for the position that the identification of cost components and the depth and quality of detail in an analysis are of paramount importance, when developing an index to be used in controlling the cost of a major weapon system.

***** S E N S I T I V I T Y A N A L Y S I S *****
 (SENSITIVITY OF AIRFRAME INDEX TO CHANGES IN GROSS WEIGHTING FACTORS)

CALENDAR YEAR 1978

GROSS MATL	GROSS LABOR	PURE MATL	PURE LABOR	NEW INDX	CURR INDX	PERCENT CHANGE
375	.6220	.2411	.7588	2.1471	2.1470	0.00
200	.8000	.1068	.8931	2.1659	2.1470	0.88
250	.7500	.1408	.8591	2.1611	2.1470	0.66
200	.7000	.1777	.8222	2.1559	2.1470	0.41
150	.6500	.2175	.7824	2.1504	2.1470	0.15
400	.6000	.2603	.7396	2.1444	2.1470	- 0.12
450	.5500	.2059	.6940	2.1380	2.1470	- 0.41
500	.5000	.2545	.6455	2.1312	2.1470	- 0.73
550	.4500	.4059	.5940	2.1239	2.1470	- 1.07
600	.4000	.4603	.5396	2.1163	2.1470	- 1.42
650	.3500	.5175	.4824	2.1083	2.1470	- 1.80
700	.3000	.5777	.4222	2.0998	2.1470	- 2.19
750	.2500	.6408	.3591	2.0910	2.1470	- 2.60
800	.2000	.7053	.2946	2.0817	2.1470	- 2.83

511.14721 = 7.700 511.1422.8 = 6.400 NEW MAT INO = 4920

VII. REFERENCES.

1. Campbell, H.G., Aerospace Price Indexes. Santa Monica, CA: The RAND Corporation, R-568-PR, December 1970.
2. Employment and Earnings. Washington, DC: US Department of Labor, Bureau of Labor Statistics
3. Field Manual 101-20, Army Aviation Planning Manual, Washington D.C.: Headquarters, Dept of the Army, January 1979.
4. Historical Inflation Indices for Army Aircraft. St. Louis, MO: US Army Aviation Systems Command, Office of the Comptroller, Cost Analysis Division, September 1973.
5. Historical Inflation Indices for Army Aircraft. St. Louis, MO: US Army Aviation Systems Command, Office of the Comptroller, Cost Analysis Division, August 1974.
6. Letter, subject: Historical Cost Inflation Indices for Army Hardware and R&D Costs. Washington, DC: US Army Materiel Command, 26 October 1972
7. Memorandum, subject: Material Composition Analysis of US Army Helicopters. St. Louis, MO: US Army Aviation Systems Command, Office of the Comptroller, Cost Analysis Division, 31 July 1973.
8. Producer Prices and Price Indexes. Washington, DC: US Department of Labor, Bureau of Labor Statistics.
9. World Combat Aircraft Directory. Garden City, NY: Doubleday and Company, Inc., 1976.

VIII. BIBLIOGRAPHY.

1. Hibdon, James E., Price and Welfare Theory.
New York, NY: McGraw-Hill Book Company, 1969.
2. International Financial Statistics. Washington, DC:
International Monetary Fund, Monthly.
3. Letter, subject: Inflation Guidance. Alexandria, VA:
U.S. Army Materiel Development & Readiness Command,
Office of the Comptroller, Cost Analysis Division,
17 May 1979.
4. Letter, subject: Inflation Guidance. Alexandria, VA:
U.S. Army Materiel Development & Readiness Command,
Office of the Comptroller, Cost Analysis Division,
17 September 1979.
5. Measuring Price Changes of Military Expenditures.
Washington, DC: US Department of Commerce, Bureau
of Economic Analysis, June 1975.

APPENDIX A
COMPUTATIONS FOR THE DERIVATION
OF REVISED WEIGHTING FACTORS
FOR THE HISTORICAL INFLATION PROGRAM

COMPARATIVE AND THE DERIVATION OF
REVISED WEIGHTING FACTORS
FOR THE HISTORICAL INFLATION PROGRAM

PPI CODE	Commodity ¹	1967 Price Per Pound	Weight ²	Product ³	Weighted ⁴ 1967 Price Per Pound
07	RUBBER AND PLASTIC PRODUCTS				
07 11 01 01	Latex				.2376
02	No. 1 Ribbed Smoked Sheets	.2642	.006	.001585	
03	No. 2 Ribbed Smoked Sheets	.1992	.009	.001793	
04	No. 3 Amber Blanket	.1951	.021	.004097	
02 11	Butyl, Regular	.1820	.021	.003822	
12	Neoprene, GN Type	.25	.012	.003	
13	Styrene Butadiene, Hot	.41	.020	.008199	
15	Polybutadiene, Non-Staining	.2224	.021	.004671	
03 21	Whole Tire Reclaim	.2476	.009	.002228	
		.113	.009	.001017	
			.128	.030412	
10 13 02 62	SHEETS, C.R., CARBON	.0737			.0737
10 13 02 64	SHEETS, C.R., STAINLESS	.5531			.5531
10 15 01 41	STEEL CASTINGS				
10 15 01 53	CLOSED DIE FORGINGS				
10 15 01 11	Ingot Molds	.0497			.0497
10 22 01 11	LEAD, PIG, COMMON	.14			.14
10 22 01 51	MAGNESIUM, PIG INGOT	.3595			.3595
10 25 01 01	ALUMINUM SHEET	.4185			.4185

<u>PPI CODE</u>	<u>Commodity</u> ¹	<u>1967 Price</u> <u>Per Pound</u>	<u>Weight</u> ²	<u>Product</u> ³	<u>Weighted</u> ⁴ <u>1967 Price</u> <u>Per Pound</u>
10 25 01 13	<u>ROD, SCREW, MACHINE STOCK</u>	.6315			.6315
10 25 01 17	<u>EXTRUSION, SOLID CIRCLE SIZE 4 TO 5</u>				.6315
10 25 01 13	<u>Rod, Screw, Machine Stock</u>	.6315			
10 25 02	<u>COPPER AND BRASS MILL SHAPES</u>				.6216
31	<u>Cartridge Brass Strip, 70-30 Alloy</u>	.6033	.121	.073	
32	<u>Yellow Brass Rod (62-35-3 Alloy)</u>	.4602	.082	.03774	
33	<u>Yellow Brass Tube (70-30 Alloy)</u>	.7841	.048	.03764	
55	<u>Copper Sheet or Strip</u>	.6924	.108	.07478	
			.359	.22316	
10 25 04 63	<u>MONEL SHEET, CR 400 ALLOY</u>	1.3752			1.3752
10 25 05	<u>TITANIUM MILL SHAPES</u> ⁵				5.2926
25	<u>Titanium Bar, Ground, 6AL-4V</u>	5.2926			

NOTES: 1. Capitalized and Underlined Commodity Titles indicate PPI Series actually used in the Historical Inflation Program.

2. Weight is Bureau of Labor Statistics Revised Relative Weight for the Wholesale Price Index. Source: 1975 Annual Supplement to Producer Prices and Price Indexes.

3. Product = (1967 Price Per Pound) x (Weight).

4. Weighted 1967 Price Per Pound = $\frac{\text{Product}}{\text{Weight}}$

NOTES (Continued):

5. 1967 Titanium Bar Price Per Pound computed by utilizing Titanium Sponge index as surrogate for 1967 - Dec 1970. Titanium Mill Shapes index established December 1970. Titanium Sponge index for December 1970 is 95.5.

Figures may not sum due to rounding.

COMPUTATIONS FOR THE DERIVATION OF
REVISED WEIGHTING FACTORS
FOR THE HISTORICAL INFLATION PROGRAM

PPI Code	Commodity	contrib. to weight Airframe	contrib. to weight Engine	1967 COST Per Pound	contr. to cost per lb. Airframe	contr. to cost per lb. Engine	contribution to weight Airframe	contribution to weight Engine
07	Rubber and Plastic Products	.17	.012	.2376	.04039	.00285	.0211	.0023
10 13 02 62	Sheets, C.R., Carbon	.055	.584	.0737	.00405	.32301	.0023	.2625
10 13 02 64	Sheets, C.R., Stainless	.22	.146	.5531	.01093	.00725	.0057	.0059
10 15 01 41	Steel Castings	.01	.077	.0497	.0014	.00725	.0007	.0025
10 15 01 53	Closed Die Forgings	.033	.021	.14	.01186	.02768	.0062	.0071
10 22 01 11	Lead, Pig, Common	.256	.004	.3595	.10715	.00879	.0560	.0021
10 22 01 51	Magnesium, Pig Ingot	.043	.001	.4185	.02715	.00253	.0142	.0051
10 25 01 01	Aluminum Sheet	.128	.005	.6315	.08083	.00632	.0472	.0025
10 25 01 13	Rod, Screw, Machine Stock	.049	.122	.6216	.03046	.00311	.0159	.0079
10 25 01 17	Extrusion, Solid Circle Size 4 to 5	.011	.019	1.3752	.01513	.16777	.0079	.1364
10 25 02	Copper and Brass Mill Shapes	.025	.019	5.2926	.13231	.10056	.0691	.0817
10 25 04 63	Monel Sheet, CR 400 Alloy							
10 25 05	Titanium Mill Shapes							
		1.000	1.000		.46167	.64986	.2411	.5281

NOTE: Revised Weighting Factors Proportional to Cost Contribution Per Pound.
Previous Weighting Factors expressed as a proportion of "composite material" index.
Revised Weighting Factors expressed as a proportion of the total index.
Previous Technical Report (TR 76-1) omitted nickel component (represented by Monel Sheet) from Engine index.

COMPUTATIONAL
FORMULA

$$\left[\begin{array}{l} \text{CONTRIBUTION TO WEIGHT :} \\ \text{PREVIOUS WEIGHTING FACTORS} \end{array} \right] \times \left[\begin{array}{l} 1967 \text{ COST} \\ \text{PER LB.} \end{array} \right] \times \left[\begin{array}{l} \text{ADJUSTMENT FACTOR} \\ \text{FOR} \\ \text{(RELATIVE IMPORTANCE} \\ \text{OF MATERIAL (RAW)} \\ \text{IN OVERALL INDEX)} \end{array} \right] = \begin{array}{l} \text{AIRFRAME \& ENGINE} \\ \text{WEIGHTING FACTORS} \end{array}$$

APPENDIX B
WHOLESALE PRICE INDEXES AND EARNINGS SERIES
USED IN
HISTORICAL INFLATION PROGRAM
WITH REVISED WEIGHTING FACTORS

PRODUCER PRICE INDEXES AND EARNINGS SERIES
USED IN HISTORICAL INFLATION PROGRAM AND
REVISED WEIGHTING FACTORS

Var	PPI Code	Commodity	Airframe	Engine	Avionics	Remarks
(1)	07	Rubber and Plastic Products	.0211	.0023		
(2)	10 13 02 62 .04	Sheets, C.R., Carbon	.0021			
(3)	10 13 02 64	Sheets, C.R., Stainless		.2625		
(4)	10 15 01 41 .05	Steel Castings	.0057			
(5)	10 15 01 53 .09	Closed Die Forgings		.0059		
(6)	10 22 01 11	Lead, Pig, Common	.0007			
(7)	10 22 01 51	Magnesium, Pig Ingot	.0062	.0225		
(8)	10 25 01 01 .02	Aluminum Sheet	.0560	.0071		
(9)	10 25 01 13	Rod, Screw, Machine Stock	.0142	.0021		
(10)	10 25 01 17 .02	Extrusion, Solid Circle Size 4 to 5	.0422	.0051		
(11)	10 25 02	Copper and Brass Mill Shapes	.0159	.0025		
(12)	10 25 04 63	Monel Sheet, CR 400 Alloy**	.0079	.1364		
(13)	10 25 05	Titanium Mill Shapes	.0691	.0817		
(14)	11 78	Electronic Components			.3150	
		Industry				
(15)	3674,9 (367X)	Other Electronic Components			.6850	
(16)	3721	Aircraft	.6220			
(17)	3722 (3724)	Aircraft Engines and Engine Parts		.4010		
(18)	3723,9 (3728)	Other Aircraft Parts and Equipment	.1369	.0709		
			1.0000	1.0000	1.0000	

COMPUTATIONAL FORMULAS : Labor Cost Indexes

The data concerning cost of labor services is supplied by the Bureau of Labor Statistics, as hourly wage rates by Standard Industry Codes, and is reported on a regular basis in Employment and Earnings. Because the material indices are percentages, and wages are expressed in dollars/hour, labor cost must be converted to a percentage (index) before calculations can be made. The dollar to percentage conversions for the labor categories are made as follows:

	<u>SIC Code</u>	<u>Industry</u>	1967		
			Current	<u>Hr. Wage</u>	
(15)	3674,9 *(367X)	Other Electronic Components	Current Hr. Wage	\div 2.34	X 100% = INDEX
(16)	3721	Aircraft Production Workers	Current Hr. Wage	\div 3.49	X 100% = INDEX
(17)	3722 *(3724)	Aircraft Engines and Engine Parts.	Current Hr. Wage	\div 3.42	X 100% = INDEX
(18)	3723,9 *(3728)	Other Aircraft Parts and Equipment.	Current Hr. Wage	\div 3.35	X 100% = INDEX

* After Cy 78, Bracketed Code Replaces Code Directly Above It.

REDUCED FORM EQUATION

$$\begin{aligned} \text{Airframe} = & .0211 (V-1) + .0021 (V-2) + .0057 (V-4) + .0007 (V-6) \\ & + .0062 (V-7) + .056 (V-8) + .0142 (V-9) + .0422 (V-10) \\ & + .0159 (V-11) + .0079 (V-12) + .0660 (V-13) + .622 (V-16) (100/3.49) \\ & + .1369 (V-18) (100/3.35) \end{aligned}$$

$$\begin{aligned} \text{Engine} = & .0023 (V-1) + .2625 (V-3) + .0059 (V-5) + .0225 (V-7) \\ & + .0071 (V-8) + .0021 (V-9) + .0051 (V-10) + .0025 (V-11) \\ & + .1364 (V-12) + .0817 (V-13) + .401 (V-17) (100/3.42) \\ & + .0709 (V-18) (100/3.35) \end{aligned}$$

$$\text{Avionics} = .3150 (V-14) + .6850 (V-15) (100/2.34)$$

Variables (V-1) thru (V-18)
are defined on page B-2

DATA/DEVELOPMENT

- (1) Calendar Year Data - As given on printout.
- (2) Monthly Data - As specified on printout.
- (3) Quarterly Data - Development from Monthly.

$$\text{Quarterly} = [(Month_{T-1}) + (Month_T) + (Month_{T+1})] / 3$$
- (4) Fiscal Year Data - Developed using appropriate quarterly data.

$$\text{Fiscal Year Average} = \frac{Q_1 + Q_2 + Q_3 + Q_4}{4}$$

(Quarters of Fiscal Year)

Variables specified on preceding chart.

APPENDIX C

HISTORICAL FLOW OF WHOLESALE PRICE INDEXES AND
EARNINGS SERIES USED IN HISTORICAL INFLATION
PROGRAM WITH REVISED WEIGHTING FACTORS

Historical Flow of Producer Price Indexes and Earnings Series used in Historical Inflation Program

Index	Calendar Year	FPI Code
Rubber and Plastic Products	47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79	07
Metals and Metal Products		10
Steel Sheets		10 13 02 62
Stainless Steel Sheets		10 13 02 64
Steel Castings		10 15 01 41
Alloy Steel Forgings		10 15 01 53
Lead		10 22 01 11
Magnesium Ingot		10 22 01 51
Titanium Sponge		10 22 01 56
Aluminum Shapes		10 25 01
Aluminum Sheet		10 25 01 01
Aluminum Rod		10 25 01 13
Aluminum Extrusion		10 25 01 17
Copper and Brass Mill Shapes		10 25 02
Monel Sheet		10 25 04 63
Titanium Mill Sheets		10 25 05
Machinery and Equipment		11
Electrical Machinery and Equipment		11 7
Electronic Components		11 78
Industry		SIC Code
Electronic Components		3674,9 (367X)
Aircraft and Parts		372
Aircraft		3721
Aircraft Engines		3722 (3724)
Other Aircraft		3723,9 (3728)

APPENDIX D

ANNUAL DATA FOR THE HISTORICAL INFLATION PROGRAM FOR U. S.
ARMY ROTARY WING AIRCRAFT

ANNUAL CALIBER VIA

DATA

(15) (16) (17) (18)

BEFORE '58

THRU
INFO'S
ONLY

1 2 3

4	7.5	68.9	1.572	95.26	95.70	100.00	107.60	107.60	107.60	74.10	70.50	143.50	93.90	1.71	2.51	2.51	2.43
46	7.6	67.5	1.497	96.40	97.20	100.00	106.00	106.00	106.00	80.60	70.50	122.40	93.50	1.77	2.64	2.64	2.55
48	7.6	65.0	1.500	96.30	95.50	100.00	110.00	110.00	110.00	83.70	87.20	117.90	98.20	1.60	2.73	2.73	2.49
50	7.6	66.5	1.687	97.00	77.60	100.00	111.50	111.50	111.50	75.00	89.90	109.10	98.20	1.93	2.70	2.81	2.70
53	7.6	73.6	1.750	97.00	56.70	100.00	106.70	106.70	106.70	73.90	91.60	101.00	96.70	1.97	2.67	2.91	2.86
52	7.6	73.9	1.833	97.00	97.00	100.00	107.60	107.60	107.60	72.40	91.60	97.30	93.70	2.01	2.95	2.93	2.89
53	7.6	76.5	1.926	97.00	97.00	100.00	101.40	101.40	101.40	70.50	90.60	97.30	93.10	2.05	3.60	3.09	2.91
54	7.6	76.9	2.070	97.00	97.00	100.00	99.40	99.40	99.40	80.10	90.60	96.00	93.10	2.14	3.15	3.17	3.08
55	7.6	92.1	2.160	97.00	97.00	100.00	98.50	98.50	98.50	99.00	94.20	100.00	97.70	2.21	3.34	3.32	3.21
56	7.6	92.2	2.270	97.00	97.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	2.36	3.40	3.42	3.35
57	7.6	91.0	2.350	97.00	97.00	100.00	95.00	95.00	95.00	107.30	100.20	99.30	97.20	2.43	3.64	3.65	3.53
58	7.6	91.40	2.470	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	2.63	3.90	3.87	3.76
59	7.6	91.40	2.560	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	2.70	4.17	4.10	3.99
60	7.6	91.40	2.660	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	2.91	4.36	4.36	4.15
61	7.6	91.40	2.760	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	3.02	4.74	4.73	4.37
62	7.6	91.40	2.860	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	3.16	5.13	5.05	4.63
63	7.6	91.40	2.960	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	3.39	5.57	5.43	5.03
64	7.6	91.40	3.060	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	3.75	6.39	6.03	5.52
65	7.6	91.40	3.160	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	3.97	6.62	6.52	5.90
66	7.6	91.40	3.260	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	4.33	7.07	7.04	6.40
67	7.6	91.40	3.360	97.00	97.00	100.00	93.40	93.40	93.40	107.30	100.20	99.30	97.20	4.40	7.70	7.60	6.90

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14)

MATERIAL COST DATA

APPENDIX E

MONTHLY DATA FOR THE HISTORICAL INFLATION PROGRAM :

MATERIALS

[illegible]

LABOR RATES

[illegible]

APPENDIX F

HISTORICAL INFLATION INDICES :

HISTORICAL INFLATION PR-1958 INDICES

AGGREGATE AIR VEHICLE EXCLUDING AVIATICS		
INDEX	FACTOR	
CY67=	FY79=	
100.0	1.0000	
---	---	
49.1	4.7199	
54.2	4.2717	
55.9	4.1475	
58.9	3.9342	
64.9	3.5720	
67.0	3.4600	
69.8	3.3213	
71.6	3.2349	
75.6	3.0666	
80.4	2.8816	
82.7	2.8024	

AIRCRAFT PRODUCTION		
INDEX	FACTOR	
CY67=	FY79=	
100.0	1.0000	
---	---	
55.2	4.2859	
61.0	3.8290	
63.1	3.7481	
66.4	3.5636	
73.3	3.2260	
74.9	3.1585	
77.8	3.0390	
79.3	2.9814	
84.0	2.8151	
90.2	2.6221	
92.5	2.5572	

HISTORICAL INFLATION CALENDAR YEAR INDICES

AIRFRAME PRODUCTION	ENGINE PRODUCTION			AVIONICS PRODUCTION			AGGREGATE AIR VEHICLE EXCLUDING AVIONICS			AGGREGATE AIR VEHICLE INCLUDING AVIONICS		
	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=
82.4	2.7950	94.2	2.5115	81.5	2.3450	85.0	2.7243	84.7	2.6917	84.7	2.6917	
83.3	2.7554	92.6	2.5531	83.2	2.3392	85.4	2.7142	85.1	2.6775	85.1	2.6775	
85.3	2.7006	95.5	2.4759	85.4	2.2773	87.6	2.6461	87.3	2.6101	87.3	2.6101	
86.0	2.6780	93.6	2.4726	87.4	2.2239	88.1	2.6290	88.1	2.5888	88.1	2.5888	
87.1	2.6450	95.9	2.4670	88.1	2.2063	89.1	2.6009	89.0	2.5618	89.0	2.5618	
88.0	2.6150	94.4	2.5052	89.0	2.1851	89.5	2.5900	89.4	2.5497	89.4	2.5497	
89.2	2.5822	92.3	2.5619	91.1	2.1335	89.9	2.5776	90.0	2.5326	90.0	2.5326	
92.3	2.4946	92.7	2.5507	92.6	2.0997	92.4	2.5071	92.4	2.4663	92.4	2.4663	
96.5	2.3373	95.5	2.4766	95.5	2.0367	96.3	2.4070	96.2	2.3702	96.2	2.3702	
100.0	2.3031	100.0	2.3650	100.0	1.9444	100.0	2.3169	100.0	2.2796	100.0	2.2796	
103.8	2.2187	104.6	2.2610	104.1	1.8671	104.0	2.2282	104.0	2.1920	104.0	2.1920	
110.4	2.0665	111.1	2.1279	108.1	1.7983	110.6	2.0958	110.3	2.0666	110.3	2.0666	
116.9	1.9708	121.8	1.9415	113.2	1.7177	118.0	1.9641	117.5	1.9404	117.5	1.9404	
120.9	1.9058	127.6	1.8537	117.4	1.6556	122.3	1.8937	121.9	1.8708	121.9	1.8708	
128.9	1.7965	130.7	1.8090	121.0	1.6073	129.3	1.7916	128.5	1.7742	128.5	1.7742	
137.7	1.6720	135.3	1.7485	125.4	1.5507	137.2	1.6888	136.0	1.6760	136.0	1.6760	
154.0	1.4957	157.2	1.5047	134.3	1.4475	154.7	1.4977	152.7	1.4933	152.7	1.4933	
172.0	1.3390	178.1	1.3277	146.2	1.3303	173.4	1.3364	170.6	1.3359	170.6	1.3359	
184.6	1.2477	189.7	1.2470	152.7	1.2734	185.7	1.2476	182.4	1.2497	182.4	1.2497	
197.8	1.1641	207.6	1.1391	164.4	1.1828	200.0	1.1584	196.5	1.1604	196.5	1.1604	
214.7	1.0725	219.3	1.0782	183.4	1.0601	215.8	1.0738	212.5	1.0726	212.5	1.0726	

HISTORICAL INFLATION MONTHLY INDICES

AIRCRAFT PRODUCTION			AUTOMOBILE PRODUCTION			AVIATION PRODUCTION			AGGREGATE AIR VEHICLE EXCLUDING AVIONICS			AGGREGATE AIR VEHICLE INCLUDING AVIONICS		
Y	M	INDEX CY67=	Y	M	INDEX CY67=	Y	M	INDEX CY67=	Y	M	INDEX CY67=	Y	M	INDEX CY67=
JUL	67	99.3	JUL	67	99.4	JUL	67	100.5	JUL	67	100.0	JUL	67	100.0
AUG	67	100.3	AUG	67	100.4	AUG	67	100.5	AUG	67	100.0	AUG	67	100.0
SEP	67	100.7	SEP	67	100.4	SEP	67	100.5	SEP	67	100.0	SEP	67	100.0
OCT	67	101.1	OCT	67	102.3	OCT	67	100.3	OCT	67	100.0	OCT	67	100.0
NOV	67	102.1	NOV	67	103.2	NOV	67	100.3	NOV	67	100.0	NOV	67	100.0
DEC	67	102.8	DEC	67	103.2	DEC	67	100.3	DEC	67	100.0	DEC	67	100.0
JAN	68	102.5	JAN	68	103.5	JAN	68	100.3	JAN	68	100.0	JAN	68	100.0
FEB	68	102.5	FEB	68	103.9	FEB	68	100.3	FEB	68	100.0	FEB	68	100.0
MAR	68	102.6	MAR	68	103.8	MAR	68	100.3	MAR	68	100.0	MAR	68	100.0
APR	68	101.9	APR	68	103.0	APR	68	100.3	APR	68	100.0	APR	68	100.0
MAY	68	102.4	MAY	68	104.1	MAY	68	100.3	MAY	68	100.0	MAY	68	100.0
JUN	68	102.8	JUN	68	104.4	JUN	68	100.3	JUN	68	100.0	JUN	68	100.0
JUL	68	103.4	JUL	68	104.5	JUL	68	100.3	JUL	68	100.0	JUL	68	100.0
AUG	68	103.9	AUG	68	105.2	AUG	68	100.3	AUG	68	100.0	AUG	68	100.0
SEP	68	104.8	SEP	68	105.3	SEP	68	100.3	SEP	68	100.0	SEP	68	100.0
OCT	68	106.6	OCT	68	105.6	OCT	68	100.3	OCT	68	100.0	OCT	68	100.0
NOV	68	107.0	NOV	68	105.8	NOV	68	100.3	NOV	68	100.0	NOV	68	100.0
DEC	68	107.3	DEC	68	107.1	DEC	68	100.3	DEC	68	100.0	DEC	68	100.0
JAN	69	107.5	JAN	69	108.1	JAN	69	100.3	JAN	69	100.0	JAN	69	100.0
FEB	69	108.9	FEB	69	108.2	FEB	69	100.3	FEB	69	100.0	FEB	69	100.0
MAR	69	109.9	MAR	69	108.1	MAR	69	100.3	MAR	69	100.0	MAR	69	100.0
APR	69	109.2	APR	69	108.4	APR	69	100.3	APR	69	100.0	APR	69	100.0
MAY	69	109.2	MAY	69	109.0	MAY	69	100.3	MAY	69	100.0	MAY	69	100.0
JUN	69	109.4	JUN	69	110.3	JUN	69	100.3	JUN	69	100.0	JUN	69	100.0
JUL	69	109.3	JUL	69	110.6	JUL	69	100.3	JUL	69	100.0	JUL	69	100.0
AUG	69	111.1	AUG	69	110.8	AUG	69	100.3	AUG	69	100.0	AUG	69	100.0
SEP	69	110.4	SEP	69	110.9	SEP	69	100.3	SEP	69	100.0	SEP	69	100.0
OCT	69	112.3	OCT	69	115.5	OCT	69	100.3	OCT	69	100.0	OCT	69	100.0
NOV	69	113.8	NOV	69	113.4	NOV	69	100.3	NOV	69	100.0	NOV	69	100.0
DEC	69	114.6	DEC	69	120.4	DEC	69	100.3	DEC	69	100.0	DEC	69	100.0
JAN	70	114.9	JAN	70	120.4	JAN	70	100.3	JAN	70	100.0	JAN	70	100.0
FEB	70	115.0	FEB	70	120.4	FEB	70	100.3	FEB	70	100.0	FEB	70	100.0
MAR	70	115.1	MAR	70	120.7	MAR	70	100.3	MAR	70	100.0	MAR	70	100.0
APR	70	115.4	APR	70	121.1	APR	70	100.3	APR	70	100.0	APR	70	100.0
MAY	70	115.7	MAY	70	121.5	MAY	70	100.3	MAY	70	100.0	MAY	70	100.0
JUN	70	115.9	JUN	70	121.8	JUN	70	100.3	JUN	70	100.0	JUN	70	100.0
JUL	70	116.1	JUL	70	121.8	JUL	70	100.3	JUL	70	100.0	JUL	70	100.0
AUG	70	116.4	AUG	70	122.2	AUG	70	100.3	AUG	70	100.0	AUG	70	100.0
SEP	70	116.8	SEP	70	122.4	SEP	70	100.3	SEP	70	100.0	SEP	70	100.0
OCT	70	117.0	OCT	70	122.9	OCT	70	100.3	OCT	70	100.0	OCT	70	100.0
NOV	70	117.0	NOV	70	123.6	NOV	70	100.3	NOV	70	100.0	NOV	70	100.0
DEC	70	117.0	DEC	70	124.9	DEC	70	100.3	DEC	70	100.0	DEC	70	100.0
JAN	71	117.9	JAN	71	124.7	JAN	71	100.3	JAN	71	100.0	JAN	71	100.0
FEB	71	119.6	FEB	71	125.1	FEB	71	100.3	FEB	71	100.0	FEB	71	100.0
MAR	71	119.8	MAR	71	125.7	MAR	71	100.3	MAR	71	100.0	MAR	71	100.0
APR	71	120.0	APR	71	126.1	APR	71	100.3	APR	71	100.0	APR	71	100.0
MAY	71	121.2	MAY	71	126.4	MAY	71	100.3	MAY	71	100.0	MAY	71	100.0
JUN	71	121.7	JUN	71	126.5	JUN	71	100.3	JUN	71	100.0	JUN	71	100.0

JUN	71	72	120.6	1.110	120.7	1.8370	118.0	1.6404	122.4	1.6929	122.0	1.8693
JUL	71	72	121.2	1.0001	120.9	1.8350	118.0	1.6400	122.9	1.8885	122.4	1.8626
AUG	71	72	121.6	1.1355	121.2	1.8367	118.2	1.6457	123.2	1.8806	122.7	1.8580
SEP	71	72	122.1	1.0001	121.6	1.8306	117.0	1.6621	123.6	1.8738	123.0	1.8537
OCT	71	72	122.7	1.0771	121.5	1.8260	117.2	1.6509	124.2	1.8652	123.5	1.8457
NOV	71	72	123.2	1.0001	120.4	1.8140	118.4	1.6429	124.8	1.8563	124.2	1.8360
DEC	71	72	123.6	1.0771	120.1	1.8175	118.9	1.6352	124.3	1.8402	123.7	1.8422
JAN	72	73	125.6	1.0355	131.0	1.8057	119.2	1.6309	126.6	1.8272	126.0	1.8086
FEB	72	73	126.8	1.0162	131.5	1.7976	120.1	1.6190	127.9	1.8120	127.1	1.7938
MAR	72	73	128.8	1.0135	131.7	1.7953	119.7	1.6238	129.4	1.7901	128.5	1.7746
APR	72	73	129.6	1.0707	132.5	1.7644	120.6	1.6125	129.5	1.7693	128.6	1.7727
MAY	72	73	129.6	1.0710	121.1	1.8459	121.1	1.6052	128.5	1.8032	127.8	1.7844
JUN	72	73	127.1	1.0126	128.6	1.8398	121.5	1.6009	127.4	1.8187	126.8	1.7978
JUL	72	73	129.6	1.0770	120.6	1.8391	121.4	1.6021	129.4	1.7907	128.6	1.7729
AUG	72	73	130.2	1.0755	129.0	1.8324	122.1	1.5923	129.9	1.7835	129.1	1.7654
SEP	72	73	131.0	1.0740	127.3	1.8293	122.1	1.5927	130.6	1.7737	129.0	1.7567
OCT	72	73	131.5	1.0706	131.6	1.7378	123.0	1.5809	134.1	1.7273	133.0	1.7137
NOV	72	73	134.5	1.0747	129.7	1.8228	121.8	1.5965	132.7	1.7460	131.6	1.7321
DEC	72	73	134.9	1.0706	131.6	1.7378	123.0	1.5809	134.1	1.7273	133.0	1.7137
JAN	73	74	134.1	1.0719	130.9	1.8063	123.1	1.5797	133.4	1.7373	132.3	1.7227
FEB	73	74	134.9	1.0704	130.9	1.8066	122.8	1.5834	134.0	1.7155	132.9	1.7155
MAR	73	74	135.3	1.0720	132.6	1.7842	123.4	1.5755	134.7	1.7200	133.6	1.7066
APR	73	74	135.3	1.0725	132.7	1.7819	124.1	1.5669	134.7	1.7199	133.7	1.7057
MAY	73	74	136.3	1.0703	134.2	1.7619	124.2	1.5653	135.8	1.7060	134.7	1.6930
JUN	73	74	136.4	1.0679	135.2	1.7487	124.5	1.5612	136.2	1.7013	135.0	1.6884
JUL	73	74	136.2	1.0695	136.3	1.7356	125.2	1.5535	136.2	1.7005	135.1	1.6869
AUG	73	74	138.5	1.0623	136.5	1.7325	126.0	1.5427	138.1	1.6778	136.9	1.6653
SEP	73	74	139.1	1.0554	136.9	1.7277	126.6	1.5356	138.6	1.6712	137.4	1.6587
OCT	73	74	141.1	1.0525	137.3	1.7220	127.3	1.5277	140.2	1.6521	138.9	1.6407
NOV	73	74	141.7	1.0529	138.0	1.7143	127.9	1.5204	140.9	1.6443	139.6	1.6330
DEC	73	74	144.5	1.0502	140.9	1.6767	129.0	1.5071	142.9	1.6213	141.5	1.6109
JAN	74	75	144.5	1.0533	140.4	1.6844	128.9	1.5086	143.6	1.6131	142.2	1.6036
FEB	74	75	145.9	1.0578	141.4	1.6727	129.5	1.5011	144.9	1.5990	143.4	1.5902
MAR	74	75	147.2	1.0544	143.9	1.6430	130.4	1.4914	146.5	1.5816	144.9	1.5735
APR	74	75	148.0	1.0565	144.6	1.6357	131.0	1.4842	147.2	1.5738	145.6	1.5657
MAY	74	75	151.3	1.0523	154.1	1.5346	132.3	1.4697	151.9	1.5251	150.0	1.5202
JUN	74	75	152.3	1.05126	156.8	1.5046	134.3	1.4478	153.3	1.5117	151.4	1.5060
JUL	74	75	154.4	1.04913	160.0	1.4777	135.4	1.4358	155.7	1.4882	153.7	1.4836
AUG	74	75	157.3	1.04637	166.1	1.4236	135.4	1.4360	159.3	1.4544	156.9	1.4528
SEP	74	75	158.4	1.04941	167.0	1.4162	137.3	1.4165	160.3	1.4453	158.0	1.4428
OCT	74	75	161.3	1.04280	168.6	1.4028	137.6	1.4133	162.9	1.4222	160.4	1.4214
NOV	74	75	162.7	1.04156	169.3	1.3967	139.4	1.3905	164.2	1.4113	161.7	1.4095
DEC	74	75	163.5	1.04037	171.8	1.3769	141.9	1.3698	165.3	1.4014	163.0	1.3986
JAN	75	76	165.6	1.03910	177.3	1.3539	143.2	1.3577	168.2	1.3776	165.7	1.3759
FEB	75	76	166.0	1.03976	178.0	1.3434	144.0	1.3503	168.2	1.3774	165.8	1.3750
MAR	75	76	167.3	1.03767	176.7	1.3385	145.5	1.3360	169.4	1.3659	166.9	1.3659
APR	75	76	168.9	1.03537	177.0	1.3302	145.2	1.3382	170.7	1.3573	168.1	1.3557
MAY	75	76	170.4	1.03315	178.2	1.3257	145.6	1.3344	172.2	1.3454	169.6	1.3445
JUN	75	76	171.9	1.03335	177.5	1.3244	146.3	1.3245	173.2	1.3379	170.5	1.3367
JUL	75	76	172.6	1.03311	177.4	1.3228	147.3	1.3143	173.7	1.3338	171.1	1.3321
AUG	75	76	174.2	1.03116	179.1	1.3171	147.9	1.3235	175.1	1.3232	172.3	1.3232
SEP	75	76	175.1	1.03152	179.1	1.3163	147.6	1.3174	176.0	1.3163	173.2	1.3164
OCT	75	76	176.3	1.03046	178.5	1.3120	147.4	1.3190	177.0	1.3091	174.0	1.3099
NOV	75	76	177.8	1.02932	179.1	1.3079	147.5	1.3170	178.1	1.3009	175.0	1.3023
DEC	75	76	178.7	1.02921	181.6	1.3024	148.7	1.3075	179.3	1.2921	176.2	1.2934
JAN	76	77	179.1	1.02746	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
FEB	76	77	180.7	1.02746	183.3	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
MAR	76	77	181.8	1.02666	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
APR	76	77	181.8	1.02666	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
MAY	76	77	182.2	1.02711	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
JUN	76	77	182.2	1.02711	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855
JUL	76	77	183.0	1.02711	183.0	1.2943	149.2	1.2943	180.4	1.2842	177.3	1.2855

JUN 76	1.2405	109.5	1.2470	1.2745	186.5	1.2421	103.1	1.2440
JUL 76	1.2407	107.3	1.2500	1.2693	107.1	1.2382	103.7	1.2408
AUG 76	1.2424	104.0	1.2109	1.2637	188.5	1.2293	105.0	1.2322
SEP 76	1.2175	104.7	1.2149	1.2555	190.4	1.2169	186.8	1.2201
OCT 76	1.2139	103.3	1.2106	1.2503	191.0	1.2132	187.4	1.2163
NOV 76	1.2035	100.7	1.2022	1.2267	191.9	1.2070	188.6	1.2087
DEC 76	1.2014	100.6	1.1910	1.2124	193.2	1.1994	189.9	1.2005
JAN 77	1.1975	103.8	1.1834	1.2161	194.0	1.1942	190.6	1.1961
FEB 77	1.1907	102.7	1.1664	1.2139	195.5	1.1851	192.0	1.1875
MAR 77	1.1742	202.7	1.1567	1.2000	197.0	1.1790	193.4	1.1790
APR 77	1.1709	206.4	1.1460	1.1933	198.8	1.1652	195.2	1.1680
MAY 77	1.1668	208.5	1.1344	1.1862	199.9	1.1593	196.3	1.1615
JUN 77	1.1577	210.2	1.1254	1.1804	201.4	1.1502	197.8	1.1527
JUL 77	1.1503	210.3	1.1244	1.1739	202.5	1.1444	198.8	1.1468
AUG 77	1.1445	211.3	1.1194	1.1579	203.5	1.1367	199.9	1.1403
SEP 77	1.1475	212.7	1.1120	1.1290	203.4	1.1392	200.3	1.1384
OCT 77	1.1365	213.0	1.1104	1.1221	205.0	1.1304	201.8	1.1297
NOV 77	1.1314	215.3	1.0945	1.1075	206.1	1.1241	203.1	1.1227
DEC 77	1.1217	215.0	1.1105	1.0909	207.0	1.1191	204.1	1.1167
JAN 78	1.1102	215.8	1.0961	1.0868	209.3	1.1070	206.3	1.1052
FEB 78	1.1052	219.2	1.1041	1.0829	209.7	1.1050	206.7	1.1031
MAR 78	1.0969	214.1	1.1047	1.0821	210.9	1.0986	207.8	1.0971
APR 78	1.0937	215.2	1.0988	1.0790	211.6	1.0948	208.5	1.0934
MAY 78	1.0895	217.6	1.0867	1.0706	212.8	1.0889	209.7	1.0873
JUN 78	1.0793	220.0	1.0749	1.0581	214.9	1.0783	211.8	1.0765
JUL 78	1.0646	221.7	1.0668	1.0566	217.5	1.0651	214.2	1.0644
AUG 78	1.0601	223.1	1.0600	1.0429	218.6	1.0600	215.4	1.0586
SEP 78	1.0420	223.4	1.0584	1.0407	221.6	1.0457	218.1	1.0453
OCT 78	1.0308	225.3	1.0592	1.0348	223.4	1.0371	219.9	1.0369
NOV 78	1.0237	228.4	1.0353	1.0174	225.7	1.0263	222.3	1.0256
DEC 78	1.0124	229.4	1.0356	1.0151	227.7	1.0176	224.1	1.0174
JAN 79	1.0112	229.7	1.0290	1.0092	228.2	1.0154	224.6	1.0149
FEB 79	1.0041	231.4	1.0220	1.0068	229.1	1.0113	225.5	1.0109
MAR 79	1.0031	233.7	1.0121	1.0067	230.5	1.0052	226.8	1.0053
APR 79	0.9931	241.1	0.9807	0.9985	234.9	0.9864	230.9	0.9874
MAY 79	0.9846	245.0	0.9652	0.9859	236.4	0.9802	232.5	0.9807
JUN 79	0.9745	249.1	0.9493	0.9766	239.2	0.9687	235.2	0.9694
JUL 79	0.9703	251.3	0.9411	0.9655	240.5	0.9635	236.6	0.9637
AUG 79	0.9593	253.1	0.9344	0.9509	243.2	0.9527	239.3	0.9526
SEP 79								

AGGREGATE AIR VEHICLE AGGREGATE AIR VEHICLE
EXCLUDING AVIONICS INCLUDING AVIONICS

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49	C50	C51	C52	C53	C54	C55	C56	C57	C58	C59	C60	C61	C62	C63	C64	C65	C66	C67	C68	C69	C70	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C93	C94	C95	C96	C97	C98	C99	C100	C101	C102	C103	C104	C105	C106	C107	C108	C109	C110	C111	C112	C113	C114	C115	C116	C117	C118	C119	C120	C121	C122	C123	C124	C125	C126	C127	C128	C129	C130	C131	C132	C133	C134	C135	C136	C137	C138	C139	C140	C141	C142	C143	C144	C145	C146	C147	C148	C149	C150	C151	C152	C153	C154	C155	C156	C157	C158	C159	C160	C161	C162	C163	C164	C165	C166	C167	C168	C169	C170	C171	C172	C173	C174	C175	C176	C177	C178	C179	C180	C181	C182	C183	C184	C185	C186	C187	C188	C189	C190	C191	C192	C193	C194	C195	C196	C197	C198	C199	C200	C201	C202	C203	C204	C205	C206	C207	C208	C209	C210	C211	C212	C213	C214	C215	C216	C217	C218	C219	C220	C221	C222	C223	C224	C225	C226	C227	C228	C229	C230	C231	C232	C233	C234	C235	C236	C237	C238	C239	C240	C241	C242	C243	C244	C245	C246	C247	C248	C249	C250	C251	C252	C253	C254	C255	C256	C257	C258	C259	C260	C261	C262	C263	C264	C265	C266	C267	C268	C269	C270	C271	C272	C273	C274	C275	C276	C277	C278	C279	C280	C281	C282	C283	C284	C285	C286	C287	C288	C289	C290	C291	C292	C293	C294	C295	C296	C297	C298	C299	C300	C301	C302	C303	C304	C305	C306	C307	C308	C309	C310	C311	C312	C313	C314	C315	C316	C317	C318	C319	C320	C321	C322	C323	C324	C325	C326	C327	C328	C329	C330	C331	C332	C333	C334	C335	C336	C337	C338	C339	C340	C341	C342	C343	C344	C345	C346	C347	C348	C349	C350	C351	C352	C353	C354	C355	C356	C357	C358	C359	C360	C361	C362	C363	C364	C365	C366	C367	C368	C369	C370	C371	C372	C373	C374	C375	C376	C377	C378	C379	C380	C381	C382	C383	C384	C385	C386	C387	C388	C389	C390	C391	C392	C393	C394	C395	C396	C397	C398	C399	C400	C401	C402	C403	C404	C405	C406	C407	C408	C409	C410	C411	C412	C413	C414	C415	C416	C417	C418	C419	C420	C421	C422	C423	C424	C425	C426	C427	C428	C429	C430	C431	C432	C433	C434	C435	C436	C437	C438	C439	C440	C441	C442	C443	C444	C445	C446	C447	C448	C449	C450	C451	C452	C453	C454	C455	C456	C457	C458	C459	C460	C461	C462	C463	C464	C465	C466	C467	C468	C469	C470	C471	C472	C473	C474	C475	C476	C477	C478	C479	C480	C481	C482	C483	C484	C485	C486	C487	C488	C489	C490	C491	C492	C493	C494	C495	C496	C497	C498	C499	C500	C501	C502	C503	C504	C505	C506	C507	C508	C509	C510	C511	C512	C513	C514	C515	C516	C517	C518	C519	C520	C521	C522	C523	C524	C525	C526	C527	C528	C529	C530	C531	C532	C533	C534	C535	C536	C537	C538	C539	C540	C541	C542	C543	C544	C545	C546	C547	C548	C549	C550	C551	C552	C553	C554	C555	C556	C557	C558	C559	C560	C561	C562	C563	C564	C565	C566	C567	C568	C569	C570	C571	C572	C573	C574	C575	C576	C577	C578	C579	C580	C581	C582	C583	C584	C585	C586	C587	C588	C589	C590	C591	C592	C593	C594	C595	C596	C597	C598	C599	C600	C601	C602	C603	C604	C605	C606	C607	C608	C609	C610	C611	C612	C613	C614	C615	C616	C617	C618	C619	C620	C621	C622	C623	C624	C625	C626	C627	C628	C629	C630	C631	C632	C633	C634	C635	C636	C637	C638	C639	C640	C641	C642	C643	C644	C645	C646	C647	C648	C649	C650	C651	C652	C653	C654	C655	C656	C657	C658	C659	C660	C661	C662	C663	C664	C665	C666	C667	C668	C669	C670	C671	C672	C673	C674	C675	C676	C677	C678	C679	C680	C681	C682	C683	C684	C685	C686	C687	C688	C689	C690	C691	C692	C693	C694	C695	C696	C697	C698	C699	C700	C701	C702	C703	C704	C705	C706	C707	C708	C709	C710	C711	C712	C713	C714	C715	C716	C717	C718	C719	C720	C721	C722	C723	C724	C725	C726	C727	C728	C729	C730	C731	C732	C733	C734	C735	C736	C737	C738	C739	C740	C741	C742	C743	C744	C745	C746	C747	C748	C749	C750	C751	C752	C753	C754	C755	C756	C757	C758	C759	C760	C761	C762	C763	C764	C765	C766	C767	C768	C769	C770	C771	C772	C773	C774	C775	C776	C777	C778	C779	C780	C781	C782	C783	C784	C785	C786	C787	C788	C789	C790	C791	C792	C793	C794	C795	C796	C797	C798	C799	C800	C801	C802	C803	C804	C805	C806	C807	C808	C809	C810	C811	C812	C813	C814	C815	C816	C817	C818	C819	C820	C821	C822	C823	C824	C825	C826	C827	C828	C829	C830	C831	C832	C833	C834	C835	C836	C837	C838	C839	C840	C841	C842	C843	C844	C845	C846	C847	C848	C849	C850	C851	C852	C853	C854	C855	C856	C857	C858	C859	C860	C861	C862	C863	C864	C865	C866	C867	C868	C869	C870	C871	C872	C873	C874	C875	C876	C877	C878	C879	C880	C881	C882	C883	C884	C885	C886	C887	C888	C889	C890	C891	C892	C893	C894	C895	C896	C897	C898	C899	C900	C901	C902	C903	C904	C905	C906	C907	C908	C909	C910	C911	C912	C913	C914	C915	C916	C917	C918	C919	C920	C921	C922	C923	C924	C925	C926	C927	C928	C929	C930	C931	C932	C933	C934	C935	C936	C937	C938	C939	C940	C941	C942	C943	C944	C945	C946	C947	C948	C949	C950	C951	C952	C953	C954	C955	C956	C957	C958	C959	C960	C961	C962	C963	C964	C965	C966	C967	C968	C969	C970	C971	C972	C973	C974	C975	C976	C977	C978	C979	C980	C981	C982	C983	C984	C985	C986	C987	C988	C989	C990	C991	C992	C993	C994	C995	C996	C997	C998	C999	C1000	C1001	C1002	C1003	C1004	C1005	C1006	C1007	C1008	C1009	C1010	C1011	C1012	C1013	C1014	C1015	C1016	C1017	C1018	C1019	C1020	C1021	C1022	C1023	C1024	C1025	C1026	C1027	C1028	C1029	C1030	C1031	C1032	C1033	C1034	C1035	C1036	C1037	C
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HISTORICAL INFLATION FISCAL YEAR INDICES

	AIRCRAFT PRODUCTION			FUSAGE PRODUCTION			AVIONICS PRODUCTION			AGGREGATE AIR VEHICLE EXCLUDING AVIONICS		AGGREGATE AIR VEHICLE INCLUDING AVIONICS	
	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	
64	100.0	1.0000	100.0	1.0000	100.0	1.0000	100.0	1.0000	100.0	1.0000	100.0	1.0000	
65	101.7	2.2646	102.5	2.3073	102.0	1.9062	101.9	2.2734	101.9	2.2366	101.9	2.2366	
66	107.1	2.1501	107.1	2.2076	106.2	1.8309	107.1	2.1629	107.0	2.1299	107.0	2.1299	
67	113.6	2.0271	117.3	2.0167	110.6	1.7583	114.4	2.0207	114.0	1.9989	114.0	1.9989	
68	112.5	1.9279	124.5	1.8994	116.4	1.6707	120.6	1.9213	120.2	1.8971	120.2	1.8971	
69	124.4	1.9520	130.0	1.8106	118.9	1.6359	125.6	1.8443	124.9	1.8245	124.9	1.8245	
70	133.2	1.7233	151.1	1.8038	122.8	1.5830	132.7	1.7454	131.8	1.7303	131.8	1.7303	
71	144.1	1.5731	147.3	1.6625	129.0	1.5069	143.7	1.6123	142.2	1.6027	142.2	1.6027	
72	164.0	1.4045	172.1	1.3738	141.4	1.3751	165.8	1.3974	163.4	1.3955	163.4	1.3955	
73	178.6	1.2945	182.3	1.2971	148.9	1.3056	179.4	1.2912	176.4	1.2924	176.4	1.2924	
74	186.1	1.2370	192.0	1.2321	153.2	1.2692	187.4	1.2365	184.0	1.2392	184.0	1.2392	
75	194.7	1.1924	203.1	1.1645	161.2	1.2021	196.6	1.1786	193.0	1.1809	193.0	1.1809	
76	208.9	1.1024	216.3	1.0934	179.5	1.0835	210.6	1.1004	207.4	1.0989	207.4	1.0989	
77	230.3	1.0000	235.5	1.0000	194.4	1.0000	231.7	1.0000	228.0	1.0000	228.0	1.0000	

APPENDIX G

ANNUAL DATA FOR THE HISTORICAL INFLATION PROGRAM - -
RAW MATERIAL PORTION ONLY

ANNUAL CALENDAR YEAR DATA

MATERIALS ONLY

	1	2	3	LABOR RATE DATA														
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
47	70.25	54.4	0.0												0.0	0.0	0.0	0.0
48	72.6	62.5	0.0												0.0	0.0	0.0	0.0
49	70.25	62.5	0.0												0.0	0.0	0.0	0.0
50	70.25	62.5	0.0												0.0	0.0	0.0	0.0
51	70.25	74.0	0.0												0.0	0.0	0.0	0.0
52	70.25	74.0	0.0												0.0	0.0	0.0	0.0
53	70.25	74.0	0.0												0.0	0.0	0.0	0.0
54	70.25	74.0	0.0												0.0	0.0	0.0	0.0
55	70.25	74.0	0.0												0.0	0.0	0.0	0.0
56	70.25	74.0	0.0												0.0	0.0	0.0	0.0
57	70.25	74.0	0.0												0.0	0.0	0.0	0.0
58	70.25	74.0	0.0												0.0	0.0	0.0	0.0
59	70.25	74.0	0.0												0.0	0.0	0.0	0.0
60	70.25	74.0	0.0												0.0	0.0	0.0	0.0
61	70.25	74.0	0.0												0.0	0.0	0.0	0.0
62	70.25	74.0	0.0												0.0	0.0	0.0	0.0
63	70.25	74.0	0.0												0.0	0.0	0.0	0.0
64	70.25	74.0	0.0												0.0	0.0	0.0	0.0
65	70.25	74.0	0.0												0.0	0.0	0.0	0.0
66	70.25	74.0	0.0												0.0	0.0	0.0	0.0
67	70.25	74.0	0.0												0.0	0.0	0.0	0.0
68	70.25	74.0	0.0												0.0	0.0	0.0	0.0
69	70.25	74.0	0.0												0.0	0.0	0.0	0.0
70	70.25	74.0	0.0												0.0	0.0	0.0	0.0
71	70.25	74.0	0.0												0.0	0.0	0.0	0.0
72	70.25	74.0	0.0												0.0	0.0	0.0	0.0
73	70.25	74.0	0.0												0.0	0.0	0.0	0.0
74	70.25	74.0	0.0												0.0	0.0	0.0	0.0
75	70.25	74.0	0.0												0.0	0.0	0.0	0.0
76	70.25	74.0	0.0												0.0	0.0	0.0	0.0
77	70.25	74.0	0.0												0.0	0.0	0.0	0.0
78	70.25	74.0	0.0												0.0	0.0	0.0	0.0

MATERIAL COST DATA

APPENDIX H

MONTHLY DATA FOR THE HISTORICAL INFLATION PROGRAM - -
RAW MATERIAL PORTION ONLY

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(CZ)	MOORE	150000	150000	150000	150000	150000	200000	200000	200000	200000	100000	250000	250000	110000	110000	ACF	100	OTHER
	CR SH	SCHS	CAL	FULL	LEAS	PAYERS	ADJUS	SE	STB	EXTRD	CP/BES	POMI	THAN	ELEC	36740.9	3722	3722	3722

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APPENDIX I

HISTORICAL INFLATION INDICES :

RAW MATERIAL PORTION ONLY.

HISTORICAL INFLATION 1914-1950 INDICES

RAW MATERIAL PORTION ONLY

AGGREGATE AIR VEHICLE EXCLUDING AVIONICS	
INDEX	FACTOR
CY67=	1.779=
100.0	1.0000
---	---
21.3	3.2449
24.1	2.8653
24.2	2.8482
25.7	2.6856
28.0	2.3988
28.6	2.4098
29.4	2.3467
29.7	2.3276
31.8	2.1734
34.4	2.0077
35.0	1.9704

AIRFRAME PRODUCTION		ENGINE PRODUCTION	
INDEX	FACTOR	INDEX	FACTOR
CY67=	1.779=	CY67=	1.779=
100.0	1.0000	100.0	1.0000
---	---	---	---
17.0	3.1362	56.2	3.4237
19.2	2.7774	41.2	3.0086
19.3	2.7690	41.5	2.9832
20.6	2.5249	43.7	2.8349
23.1	2.3103	44.7	2.5456
22.9	2.3206	44.7	2.5434
23.4	2.2745	50.3	2.4645
23.6	2.2557	50.7	2.4452
25.4	2.1024	54.1	2.2897
27.4	1.9462	58.0	2.1081
27.9	1.9113	60.0	2.0666

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HISTORICAL INFLATION CALENDAR YEAR INDICES

RAW MATERIAL PORTION ONLY

CY	AFTER RAW PRODUCTION			FACILE PRODUCTION			AIRCRAFT PRODUCTION			AGGREGATE AIR VEHICLE EXCLUDING AVIATION			AGGREGATE AIR VEHICLE INCLUDING AVIATION		
	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=
53	27.7	1.0000	53.6	2.0002	31.5	1.5307	34.8	1.9030	34.5	1.9235	34.5	1.9235	34.5	1.9235	34.5
54	25.8	1.0000	56.3	2.2018	31.3	1.5361	32.6	2.1189	32.5	2.1189	32.5	2.1189	32.5	2.1189	32.5
55	26.2	1.0000	57.9	2.1394	30.9	1.5338	33.2	2.0762	33.0	2.0762	33.0	2.0762	33.0	2.0762	33.0
56	25.4	1.0000	57.0	2.1746	30.9	1.5358	32.4	2.1292	32.3	2.1292	32.3	2.1292	32.3	2.1292	32.3
57	24.5	1.0000	55.8	2.2200	30.5	1.5374	31.5	2.1915	31.4	2.1915	31.4	2.1915	31.4	2.1915	31.4
58	23.7	1.0000	53.2	2.3280	30.1	1.5392	30.2	2.2835	30.2	2.2835	30.2	2.2835	30.2	2.2835	30.2
59	23.5	1.0000	49.8	2.4896	30.0	1.5397	29.4	2.3497	29.4	2.3497	29.4	2.3497	29.4	2.3497	29.4
60	23.6	1.0000	49.0	2.5274	30.0	1.5397	29.3	2.3597	29.3	2.3597	29.3	2.3597	29.3	2.3597	29.3
61	23.8	1.0000	49.8	2.4098	30.4	1.5607	29.6	2.3323	29.6	2.3323	29.6	2.3323	29.6	2.3323	29.6
62	20.1	1.0000	52.8	2.3466	31.5	1.5294	30.5	2.2640	30.5	2.2640	30.5	2.2640	30.5	2.2640	30.5
63	24.5	1.0000	54.3	2.2808	31.2	1.5401	31.1	2.2170	31.1	2.2170	31.1	2.2170	31.1	2.2170	31.1
64	25.5	1.0000	57.8	2.1436	31.7	1.5202	32.7	2.1117	32.6	2.1117	32.6	2.1117	32.6	2.1117	32.6
65	26.2	1.0000	65.3	1.8979	31.8	1.5163	34.9	1.9763	34.6	1.9763	34.6	1.9763	34.6	1.9763	34.6
66	26.2	1.0000	67.7	1.5311	32.3	1.2903	35.4	1.9495	35.1	1.9495	35.1	1.9495	35.1	1.9495	35.1
67	26.6	1.0000	65.9	1.6002	32.6	1.2857	35.3	1.9391	35.0	1.9391	35.0	1.9391	35.0	1.9391	35.0
68	27.3	1.0000	65.2	1.6725	32.9	1.2734	35.9	1.9215	35.6	1.9215	35.6	1.9215	35.6	1.9215	35.6
69	34.2	1.0000	62.9	1.4955	31.1	1.1939	45.0	1.5344	44.6	1.5344	44.6	1.5344	44.6	1.5344	44.6
70	39.1	1.0000	35.7	1.2844	36.4	1.1518	51.7	1.3569	50.2	1.3569	50.2	1.3569	50.2	1.3569	50.2
71	42.2	1.0000	100.6	1.2319	36.5	1.1409	55.2	1.2562	53.3	1.2562	53.3	1.2562	53.3	1.2562	53.3
72	45.6	1.0000	111.5	1.1115	37.6	1.1125	60.2	1.1453	58.0	1.1453	58.0	1.1453	58.0	1.1453	58.0
73	49.2	1.0000	113.2	1.0943	40.0	1.0976	63.5	1.0777	61.1	1.0777	61.1	1.0777	61.1	1.0777	61.1

RAY, KAT: KJAL POKI ON ONLY

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MAY	76	76	41.5	1.2097	9.48	1.2529	36.2	1.1500	54.3	1.2115	52.5	1.2635
JUN	76	76	42.1	1.2055	9.50	1.2516	36.4	1.1520	54.0	1.2099	52.9	1.2525
JUL	76	71	42.3	1.2005	9.46	1.2472	36.4	1.1520	55.0	1.2552	53.1	1.2482
AUG	76	71	42.9	1.2043	9.50	1.2149	36.4	1.1510	56.0	1.2326	54.0	1.2271
SEP	76	71	40.1	1.2001	9.52	1.2010	36.5	1.1490	57.2	1.2005	55.1	1.2026
OCT	75	77	44.1	1.2040	9.52	1.2008	36.6	1.1441	57.3	1.2054	55.2	1.2014
NOV	76	77	44.1	1.2040	9.52	1.2005	36.7	1.1421	57.2	1.2064	55.2	1.2021
DEC	76	77	44.0	1.2034	9.52	1.2005	36.7	1.1402	57.1	1.2083	55.1	1.2030
JAN	77	77	43.9	1.2040	9.55	1.1746	37.1	1.1276	57.5	1.1982	55.6	1.1935
FEB	77	77	44.0	1.2015	9.52	1.1672	37.2	1.1247	57.0	1.1934	55.4	1.1849
MAR	77	77	44.4	1.2019	9.51	1.1362	37.2	1.1247	58.9	1.1749	56.6	1.1715
APR	77	77	45.4	1.1755	9.54	1.1349	37.4	1.1190	59.6	1.1580	57.4	1.1562
MAY	77	77	45.5	1.1735	9.55	1.1005	37.4	1.1130	60.4	1.1433	58.1	1.1417
JUN	77	77	45.5	1.1734	9.55	1.0921	37.5	1.1131	60.6	1.1395	58.3	1.1382
JUL	77	77	46.3	1.1520	9.53	1.0837	37.4	1.1200	61.4	1.1257	59.0	1.1235
AUG	77	77	46.4	1.1463	9.54	1.0835	37.4	1.1190	61.5	1.1219	59.1	1.1217
SEP	77	77	46.2	1.1535	9.55	1.0915	36.0	1.1033	61.2	1.1279	58.9	1.1263
OCT	77	74	46.5	1.1522	9.56	1.0913	38.1	1.0978	61.2	1.1271	58.9	1.1252
NOV	77	76	46.6	1.1433	9.50	1.0969	38.3	1.0924	61.4	1.1247	59.1	1.1226
DEC	77	76	46.6	1.1437	9.50	1.0969	38.3	1.0942	61.4	1.1245	59.1	1.1226
JAN	78	76	46.3	1.1434	9.51	1.1129	39.2	1.0687	61.2	1.1281	59.0	1.1241
FEB	78	76	47.3	1.1275	9.51	1.1119	39.3	1.0661	61.6	1.1213	59.3	1.1176
MAR	78	74	48.2	1.1057	9.51	1.1120	39.6	1.0568	62.3	1.1083	60.0	1.1049
APR	78	76	48.5	1.0999	9.51	1.1185	39.5	1.0610	62.3	1.1072	60.1	1.1042
MAY	78	74	48.7	1.0953	9.51	1.1094	39.7	1.0551	62.7	1.1009	60.4	1.0979
JUN	78	74	48.9	1.0900	9.51	1.0974	39.9	1.0484	63.2	1.0930	60.8	1.0901
JUL	78	73	49.3	1.0831	9.54	1.0837	40.0	1.0420	63.8	1.0827	61.4	1.0803
AUG	78	76	50.1	1.0642	9.53	1.0750	40.0	1.0468	64.6	1.0685	62.1	1.0671
SEP	78	76	50.2	1.0636	9.50	1.0779	40.1	1.0451	64.6	1.0689	62.1	1.0673
OCT	78	79	50.3	1.0511	9.53	1.0939	40.5	1.0346	64.5	1.0701	62.1	1.0676
NOV	78	79	50.5	1.0559	9.54	1.0832	40.9	1.0226	64.7	1.0666	62.3	1.0637
DEC	78	79	50.9	1.0434	9.57	1.0713	40.9	1.0226	65.3	1.0574	62.8	1.0552
JAN	79	79	51.1	1.0423	9.57	1.0569	41.1	1.0195	65.8	1.0444	63.4	1.0465
FEB	79	79	51.6	1.0330	9.56	1.0450	41.3	1.0133	66.5	1.0377	64.0	1.0361
MAR	79	79	52.2	1.0210	9.57	1.0354	41.5	1.0094	67.2	1.0267	64.7	1.0256
APR	79	79	54.5	0.9734	9.54	0.9997	41.8	1.0018	69.9	0.9871	67.1	0.9880
MAY	79	79	55.1	0.9574	9.55	0.9946	41.9	0.9968	71.4	0.9663	68.5	0.9683
JUN	79	79	55.4	0.9527	9.56	0.9945	42.4	0.9884	72.3	0.9553	69.3	0.9574
JUL	79	79	55.7	0.9572	9.57	0.9257	42.4	0.9790	73.1	0.9444	70.1	0.9465
AUG	79	79	56.0	0.9517	9.57	0.9197	43.3	0.9668	73.5	0.9386	70.5	0.9404
SEP	79	79	56.6	0.9424	9.59	0.9167	44.1	0.9503	74.0	0.9330	71.0	0.9341

HISTORICAL INFORMATION QUALITY INDICES

RAW MATERIAL PORTION ONLY

QIR	CY	AVERAGE PERFORMANCE		CAPITAL PRODUCTION		AVIATION PRODUCTION		AGGREGATE AIR VEHICLE EXCLUDING AVIATICS		AGGREGATE AIR VEHICLE INCLUDING AVIATICS	
		INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=	INDEX CY67=	FACTOR FY79=
3	67	20.1	2.1165	52.4	2.3642	31.4	1.5339	30.4	2.2732	30.5	2.1764
4	67	20.3	2.1134	51.0	2.2762	31.3	1.5365	30.9	2.2364	30.9	2.1452
1	68	24.5	2.1793	54.3	2.2902	31.3	1.5374	31.2	2.2157	31.2	2.1274
2	68	24.5	2.1112	54.4	2.2791	31.3	1.5363	31.1	2.2192	31.1	2.1307
3	68	24.6	2.1192	54.3	2.2751	31.2	1.5428	31.2	2.2107	31.2	2.1240
4	68	24.5	2.1133	54.2	2.2952	31.2	1.5419	31.1	2.2199	31.1	2.1316
1	69	25.0	2.1328	54.7	2.2234	31.4	1.5316	31.8	2.1680	31.8	2.0853
2	69	25.5	2.1031	53.4	2.1970	31.7	1.5215	32.4	2.1327	32.3	2.0531
3	69	25.4	2.1077	57.1	2.1702	31.7	1.5193	32.6	2.1149	32.5	2.0373
4	69	25.9	2.1050	52.0	1.9995	32.0	1.5094	33.9	2.0372	33.7	1.9681
1	70	26.1	2.1042	63.1	1.9032	31.7	1.5215	34.0	1.9035	34.5	1.9227
2	70	26.3	2.1037	63.1	1.9030	31.7	1.5224	34.9	1.9766	34.6	1.9167
3	70	26.3	2.1023	65.2	1.9994	31.9	1.5132	35.0	1.9748	34.6	1.9139
4	70	26.2	2.1031	65.7	1.9065	32.1	1.5063	35.0	1.9731	34.7	1.9115
1	71	26.1	2.1005	60.1	1.8747	32.5	1.2874	35.0	1.9743	34.7	1.9100
2	71	26.4	2.1021	67.4	1.8534	32.4	1.2915	35.5	1.9440	35.2	1.8839
3	71	26.4	2.1000	61.7	1.8044	32.5	1.2903	35.8	1.9281	35.5	1.8697
4	71	26.4	2.1041	63.5	1.8079	32.3	1.2933	35.7	1.9319	35.4	1.8738
1	72	26.4	2.1033	60.7	1.8039	32.5	1.2899	35.0	1.9271	35.5	1.8688
2	72	26.6	2.1019	67.5	1.8364	32.7	1.2820	35.7	1.9327	35.4	1.8726
3	72	26.7	2.1009	63.4	1.9403	32.7	1.2824	34.9	1.9763	34.7	1.9110
4	72	26.6	2.1043	63.6	1.9481	32.5	1.2678	34.0	1.9015	34.6	1.9163
1	73	26.7	1.9046	60.1	1.8927	32.0	1.2828	35.0	1.9694	34.0	1.9050
2	73	27.1	1.9702	63.2	1.8750	32.3	1.2746	35.5	1.9303	35.5	1.8695
3	73	27.3	1.9535	67.1	1.8651	32.3	1.2710	36.1	1.9100	35.8	1.8512
4	73	28.0	1.9054	67.4	1.8308	33.1	1.2645	36.7	1.8735	36.4	1.8226
1	74	28.1	1.9100	67.7	1.7785	33.3	1.2471	36.7	1.7650	36.1	1.7384
2	74	32.7	1.9323	73.9	1.8705	34.3	1.2115	42.1	1.6074	42.1	1.5749
3	74	35.4	1.9041	63.4	1.8350	35.5	1.1754	46.2	1.4317	47.0	1.4122
4	74	37.6	1.9175	63.0	1.8322	36.6	1.1457	45.0	1.3022	46.6	1.3644
1	75	33.5	1.9312	77.1	1.8759	36.4	1.1366	51.5	1.3394	50.1	1.3245
2	75	34.7	1.8710	74.2	1.8046	36.5	1.1474	51.6	1.3369	50.1	1.3231
3	75	39.5	1.8302	74.4	1.8442	36.0	1.1553	51.9	1.3244	50.4	1.3164
4	75	39.4	1.8432	74.4	1.8442	36.0	1.1645	51.8	1.3333	50.2	1.3212
1	76	40.3	1.8317	93.7	1.8555	36.1	1.1590	53.3	1.2950	51.6	1.2855
2	76	41.5	1.8354	93.9	1.8280	36.3	1.1550	54.3	1.2722	52.5	1.2641
3	76	43.1	1.8311	101.5	1.8297	36.4	1.1503	56.1	1.2311	54.1	1.2257
4	76	44.1	1.8107	115.2	1.8007	36.7	1.1421	57.2	1.2087	55.1	1.2024
1	77	44.1	1.8065	103.9	1.8154	37.2	1.1257	50.1	1.1887	56.0	1.1846
2	77	45.4	1.8741	111.6	1.8039	37.4	1.1107	60.2	1.1472	57.9	1.1453
3	77	46.5	1.8103	114.1	1.8002	37.0	1.1140	61.4	1.1245	59.0	1.1239
4	77	46.5	1.8140	113.2	1.8030	38.3	1.0948	61.3	1.1254	59.0	1.1234
1	78	47.5	1.8337	111.4	1.8124	39.4	1.0638	61.7	1.1192	59.4	1.1155
2	78	48.7	1.8031	111.2	1.8094	39.7	1.0546	62.7	1.1004	60.4	1.0974
3	78	49.9	1.8347	114.0	1.8043	40.0	1.0400	64.3	1.0733	61.9	1.0716
4	78	50.5	1.8347	114.0	1.8044	40.4	1.0265	64.6	1.0647	62.4	1.0622
1	79	51.7	1.8347	113.1	1.8147	41.3	1.0140	65.5	1.0375	64.0	1.0360
2	79	53.0	1.8347	117.5	1.8347	42.1	0.9963	71.2	0.9934	66.3	0.9710
3	79	56.1	1.8347	114.2	1.8347	42.0	0.9800	70.5	0.9587	70.5	0.9403

HISTORICAL INFLATION
FISCAL YEAR INDICES

RAW MATERIAL PORTION ONLY

FY	AIRFRAME PRODUCTION			ENGINE PRODUCTION			AVIONICS PRODUCTION			AGGREGATE AIR VEHICLE EXCLUDING AVIONICS			AGGREGATE AIR VEHICLE INCLUDING AVIONICS		
	INDEX CY67=	FACTOR FY78=	INDEX CY67=	INDEX CY67=	FACTOR FY78=	INDEX CY67=	INDEX CY67=	FACTOR FY78=	INDEX CY67=	INDEX CY67=	FACTOR FY78=	INDEX CY67=	INDEX CY67=	FACTOR FY78=	INDEX CY67=
68	24.3	1.9784	53.8	31.3	2.0921	31.3	31.3	1.2553	30.9	30.9	2.0224	30.9	30.9	1.9447	30.9
69	24.9	1.9333	55.2	31.4	2.0380	31.4	31.4	1.2533	31.6	31.6	1.9739	31.6	31.6	1.9024	31.6
70	26.0	1.8522	62.3	31.8	1.8051	31.8	31.8	1.2381	34.1	34.1	1.8330	34.1	34.1	1.7772	34.1
71	26.2	1.8341	66.1	32.2	1.7018	32.2	32.2	1.2205	35.1	35.1	1.7787	35.1	35.1	1.7273	35.1
72	26.5	1.8191	68.3	32.5	1.6461	32.5	32.5	1.2109	35.8	35.8	1.7457	35.8	35.8	1.6967	35.8
73	26.8	1.7977	69.4	32.7	1.7459	32.7	32.7	1.2039	35.1	35.1	1.7766	35.1	35.1	1.7230	35.1
74	29.4	1.6349	70.8	33.6	1.5900	33.6	33.6	1.1722	38.6	38.6	1.6166	38.6	38.6	1.5715	38.6
75	37.9	1.2710	95.9	36.4	1.1976	36.4	36.4	1.0811	56.3	56.3	1.2405	56.3	56.3	1.2287	56.3
76	40.2	1.1961	96.8	36.1	1.1619	36.1	36.1	1.0830	52.8	52.8	1.1822	52.8	52.8	1.1755	52.8
77	43.0	1.1185	101.5	36.4	1.1083	36.4	36.4	1.0804	56.0	56.0	1.1144	56.0	56.0	1.1121	56.0
77	44.9	1.0723	109.0	37.2	1.0323	37.2	37.2	1.0566	59.1	59.1	1.0559	59.1	59.1	1.0560	59.1
78	48.1	1.0000	112.5	39.3	1.0000	39.3	39.3	1.0000	62.4	62.4	1.0000	62.4	62.4	1.0000	62.4

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